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"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again." —GENERAL SHERMAN.

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THE EXPERIENCES OF OUR ARMY SINCE THE OUTBREAK OF THE WAR WITH SPAIN: WHAT PRACTICAL USE HAS BEEN MADE OF THEM AND HOW MAY THEY BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING EFFICIENCY.

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O much of moment has happened to our army as well as to our country since the beginning of the war with Spain, that even a bare recital of military events would form a history in itself, and far transcend the contemplated limits of this essay.

Had the American people been told a decade ago that our little army would invade and conquer the territory of a European power; would participate with honor in an international expedition against the capital of China; would land an army in the Orient, and subdue a treacherous Malay race nearly 8000 miles from its base, such statements would have been received with derision and incredulity, and public opinion would have stamped the speaker as a madman.

Shall we now forget those serious debates in the halls of Congress, in which it was solemnly affirmed as improbable that our country would ever again engage in war; that by reason of our isolation, as well as by virtue of the general goodwill of the nations of the earth, we were forever safe from inter-

ference by bellicose powers; and finally, that if misunderstandings should arise, arbitration was the factor of the future which would make war impossible?

Attempts were not wanting to reduce our already diminutive army to numbers unbecoming a third-rate power. Congress had so feebly responded to the Endicott Board on coast-defense, that in 1898, thirteen years after adoption of the recommendations of the Board, but 151 pieces of ordnance were in position, of the 2362 contemplated. The militia law had been allowed to remain in the same defective condition, as it was in the time of Washington and Jefferson. No national reserves had ever been provided for by law, and the staff departments of the army had been repeatedly discouraged from accumulating a proper reserve of war supplies.

Although such was the enervation with which thirty years of peace had afflicted the business methods of the War Department, and the Secretary of War has stated that "the governmental machinery was altogether inadequate to immediately meet the emergency" of the war with the Kingdom of Spain, the responsibility for our unpreparedness must be laid primarily on that branch of our government, to which the Constitution has delegated the power to "provide for the common defense," and to "raise and support armies."

If the beginning of the war with Spain—a second-rate military power, and a degenerate in political and commercial importance—found our country without accurate maps and statistical information of our adversary's military resources; lacking in carefully formulated plans of mobilization, concentration and campaign; without magazine rifles,* smokeless powder, and breech-loading cannon for our reserves, and with reserves themselves—the peers of any soldiers on earth in intelligence, bravery and military initiative, but absolutely ignorant of the more serious phases of war; if, we repeat, this comparatively petty war found us more or less unprepared, what must have been our loss in lives, treasure and national prestige had we been pitted against a first-class power. That is a question which may well give us pause.

*There were 53,508 United States magazine rifles and 14,895 magazine carbines, caliber .30, including those in the hands of regular troops. In addition, there were 265,895 Springfield rifles caliber .45, and 7,893 carbines for which there was no smokeless powder.

MOBILIZATION AND CONCENTRATION.

The war with Spain, declared from the 21st of April, 1898, found us with the smallest Regular Army, in proportion to population,* that we have had at the beginning of any of our wars. It consisted of but 2143 officers and 26,040 enlisted men, *or less than four-tenths of one per cent. of our estimated population.*

A large percentage of its officers were graduates of the Military Academy, and it may be said, without fear of contradiction, that never before was its enlisted personnel so highly trained and disciplined for the emergency which confronted them. The army was at this time organized into ten regiments of cavalry, twenty-five of infantry, and seven of artillery.

By the Act of Congress of April 26, 1898, the third battalion of four companies was given to infantry regiments, and the regular force was authorized to be increased to 61,000 men. During the month of May following, its strength had been recruited to 44,125, and in August, at the time of signing the protocol with Spain, it had reached a strength of 58,688 officers and men.

By authority of the law of April 22, 1898, the President issued a call for 125,000 volunteers, and on May 25th following, for 75,000 additional. All of these were state troops, organized after the manner of volunteers of the Civil War, but Congress further authorized the organization of sixteen regiments of United States volunteers.

By the end of the month of May, 124,804 volunteers had been organized into regiments and mustered into the United States service; by August this number had been swelled to 216,029, and the total number of regulars and volunteers was 274,717 officers and men. These figures are not merely given as statistics of historic interest. They are exponents of the rapidity of recruiting volunteers at the beginning of a popular war, but as will be shown later on, they are unfortunately no index to the military quality of such levies.

Before passing from the subject of the President's call for volunteers, it is interesting to note that under the Constitution the power to "raise and support armies" resides in Congress.

*War of 1812, Regular Army, 6744, or .87 to 1000 of population; Florida War (1818), Regular Army, 3888, or .42 to 1000 of population; Mexican War (1846), Regular Army, 8613, or .42 to 1000 of population; Civil War (1861), Regular Army, 18,093, or .56 to 1000 of population; Spanish War (1898), Regular Army, 26,040, or .38 to 1000 of population.

Should, therefore, a great war emergency arise during the recess of that body, the country would be entirely dependent *ad interim* on its Regular Army. The necessity for such additional volunteer force while Congress was assembling would seem to be very remote, were it not recalled that just such an emergency has arisen once before in the nation's history. In May, 1861, President Lincoln assumed dictatorial powers in violation of the Constitution, increased the strength of the Regular Army and called for volunteers, and directed the Secretary of the Treasury to advance two millions of dollars without security, for immediate military necessities. When Congress assembled on July 4th following, the President's action was, of course, legalized, but the necessity for such action may occur again. Congress has recently authorized the President to increase the regular forces to a maximum of 100,000 men, but, as will be referred to later, further legislation is necessary, looking to the enrollment of a volunteer reserve.

The Volunteer Forces.—A not unexpected deduction from our experiences in the Mexican and Civil Wars was that the efficiency of American volunteers was to be measured by the previous training, professional zeal, and soldierly discipline of their officers. The enlisted personnel has ever been of splendid natural quality, and has not varied considerably in different regiments. Trained officers have by no means been numerous.

The Spanish War was no exception in this respect, because the same obsolete system of selection of officers was followed as in former wars, and naturally the same results followed.

The Act of Congress of April 22, 1898—before referred to—designated the two branches of the military establishment as the Regular Army and the Volunteer Army of the United States; and following the precedent of the Civil War—legislation so strongly condemned by the late Maj.-Gen. Emory Upton*—left the appointment of officers of volunteers to the governors of the several States.

Such a method of selection was justified at the outbreak of the Civil War on the ground that volunteers were militia, and by the Constitution the appointments were to be reserved to the States. That volunteers are not militia has now long been held. But in both the Civil and Spanish Wars the main reason for following the old system appears to have been that no better system had ever been carefully thought out, which

*See Upton's *Military Policy of the United States*, (pp. 258 259).

was acceptable to the States. In such emergencies as ever follow a declaration of war, there is no time for new systems to be prepared; State patronage demands the appointment of officers, regardless of qualifications, and so urgent are the necessity and straits of the national government in such crises, for the rapid mobilization of troops, that all other considerations give way to it. As will be shown later, this obsolete system, unworthy of a great government and unjust to the gallant soldiers who are compelled to accept the officers whom the government gives, is still a part of our military system under existing law, and should war be declared to-morrow, the same defective scheme of selection would obtain.

Volunteer regiments organized under the act of April 22, 1898, differed very widely in efficiency and discipline, as was to be expected. Some states had given extraordinary encouragement to the training of their militia along practical lines; others, as we all know, were mostly a paper force without any real value as a national asset. In such regiments as included a regular officer in its personnel—limited by law to one—there was greater progress made, other things being equal, than in regiments officered entirely by volunteers. Some regiments were mustered in well-equipped with uniforms, arms and accouterments, and under excellent control by their officers; others reported for muster in such a state of disorganization as to be equally dangerous to friend and foe. There were many excellent volunteer regiments, but they became so in spite of the system then in operation, and not in any way by reason of it.

There can be no possible doubt that in due time, with patient labor and unceasing training, such volunteers as were concentrated in the great camps during the year 1898, could, as was the Army of the Potomac under McClellan, have been gradually molded into a dependable force. But bearing in mind the suddenness of modern wars, as well as their comparative shortness of duration, it is very doubtful if thirty per cent. of the volunteer forces mustered in during the war with Spain, became entirely dependable for service against the regular army of a foreign power during the entire period of their service.

As distinguished from these volunteer regiments of the Spanish War, were those United States volunteers, organized under the Act of Congress of March 2, 1899—the following year—

for service in the Philippines. As volunteer regiments, it has been the almost unanimous verdict that they have never been surpassed. Certainly never, in such a short space of time, have such excellent troops been organized, trained and put in the field.

If the cause of this efficiency be analyzed, it will be found to have resulted from four factors:

1. In most cases the field officers of the regiments were selected from experienced officers of the regular service.
2. The company officers were principally selected by the War Department, from officers who had served creditably in State organizations during the war with Spain.
3. The fact that from this method of selection the officers were in no way under obligations to the men under them.
4. From careful selection of the enlisted personnel, accepting only the physically perfect, and after enlistment summarily discharging those deficient in the qualifications of a good soldier.

Under this Act of Congress, 1,524 officers and 33,050 men were enlisted, organized, equipped, and instructed, and were on their way to their destination in less than six months from the date of passage of the law. They proved themselves a thoroughly reliable force in the Philippines, and it was largely through their aid, that the Philippine insurrection was checked, and relapsed into guerrilla warfare.*

Present Legislation.—The defects of our earlier volunteer organization, and the immense advantages of our later system, have been patent to us for the past five years. What, if anything, has been done toward an improved organization in time of war, and toward the formation, training and inspection of forces supplementary to the Regular Army?

If we examine into the legislation enacted since the Spanish War affecting these questions, it will be found that, outside of the adoption of the three-battalion organization for infantry and the corps organization for artillery, the most important and far-reaching is that known as "An act to promote the efficiency of the militia, and for other purposes," approved January 21, 1903.†

*In the years 1900 and 1901, the regular regiments in the Philippines were so disorganized and depleted by the discharge of old soldiers, and their recruitment by untrained men, that they often suffered at this period by comparison with the regiments of U. S. Volunteers. There were no facilities for drilling recruits in the Philippines, and a long period elapsed before the regulars could rise to their former standard.

†Commonly known as the Dick Bill.

The policy of our Government with regard to a limited standing army, and with recourse to volunteer forces in war, has so often been affirmed* as to have the force of unwritten law. In future wars it is extremely improbable that we shall dare to put a lesser force in the field than 300,000 men, so that, with expansion of our Regular Army to its superior limit, there will be need for reserves of some character to the number of at least 200,000. To provide such a force, of fair physical and mental standards, knowing how to shoot, and with some knowledge of the elementary problems of field-service—most of all with officers of some ability and experience—would be the object of legislation, and the Act of Congress above referred to—more commonly known as the Dick Bill—was intended to provide such a force.

Although containing some vital defects, stamping it at once as a compromise measure, it is such a vast improvement on the old militia system, that the country may well be thankful that such an advance in progress has at last been made. In considering the imperfections of the bill, it must be borne in mind that militia legislation must conform to the constitutional requirement, placing the duty of providing arms, organization and discipline, on Congress, but reserving to the States respectively the appointment of officers, and the authority of training the militia according to the discipline prescribed by Congress.

A brief synopsis of the bill will be made: It deals first with the question of militia, and second with volunteers. After prescribing those citizens liable to and exempted from militia service, and the manner of calling forth the militia for a period not exceeding nine months to suppress insurrections and repel invasions, it provides for issues of arms, ammunition and other military supplies by the national government; for regular inspection by officers of the army detailed by the Secretary of War; for participation by the militia in joint maneuvers with the Regular Army; for pay and allowances to militia participating in encampments, and for the attendance of regular officers at such encampments, at the request of the governor thereof.

The second part of the bill† deals with the subject of future volunteers, and provides for securing an eligible list of persons

*See Reports of Secretary of War for 1900 and 1901.

†Section 23.

specially qualified to hold volunteer commissions, by examination through army boards of those persons having previous service in the regulars or volunteers, or in the National Guard. But appointments from this eligible list shall not be deemed to include appointments in such regiments of the organized militia as volunteer in a body, or the officers of which are appointed by the governor of a state.

The following section prescribes that future volunteer forces shall be organized as provided by the Act of Congress approved April 22, 1898, which, as we have seen in a previous discussion of the subject, gave over the appointments of volunteer officers to the governors of States.

The bill, as originally drawn, contained a section following that which pertains to the qualification of officers, providing for the enrollment of a volunteer force of 100,000 men in time of peace, to which these qualified officers might be appointed, and to which unrestricted gubernatorial State appointments were not to apply. But in the passage of the bill this most important provision was stricken out, thus rendering nugatory, in a way, this portion of the bill. Volunteer officers are provided for, but no volunteer reserve to which these officers can be appointed—excepting the trivial force authorized under the old law of April 22, 1896.* It is to be hoped that future legislation will provide for a volunteer reserve, and the General Staff of the army should frame such a basis of organization as will give the country a body of soldiers, supplementary to the Regular Army and the organized militia.

The weakness of any militia system—aside from its limitations as to the period and place of its military service—has been a matter of history. In 1870 General Washington indited these significant words to the President of Congress: "Regular troops alone are equal to the exigencies of modern war, as well for defense as offense, and whenever a substitute is attempted it must prove illusory and ruinous. No militia will ever acquire the habits necessary to resist a regular force. * * * The firmness requisite for the real business of fighting is only to be attained by a constant course of discipline and service."†

In the year 1812 both Massachusetts and Connecticut absolutely refused to furnish the militia called for by President

*Of this bill, as finally passed, the Secretary of War has said: "It does not represent fully anyone's views, but contains many important provisions upon which an agreement has been reached."

†Sparks' Writings of Washington (Volume 7).

Madison; in 1861 the States of Virginia, South Carolina, Kentucky, Tennessee, Missouri and Arkansas, made a similar refusal; and during the recent Spanish War it was possible for for an unwilling State to furnish its volunteers from another State.* These incidents draw attention to the factor of States' rights, which has more than once caused embarrassment to the Federal Government. In spite of the fact that the Constitution declares that "a well-regulated militia being necessary to the welfare of a free State," etc., it is hazardous to depend wholly upon such a force as a first reserve, either as militia proper or as militia-volunteers. While the office of the Military Secretary has recently reported that probably 75 per cent. of the organized militia would respond to a call for service in war, such an estimate is, of course, merely conjectural.

However, the militia of Bladensburg and the First Bull Run can in no way be compared in personnel, equipment and training to some of the splendid organizations that form part of our system to-day. The Dick Bill has made possible, in the militia, an admirable training school for future volunteers, and it is the bounden duty of every officer of the Regular Army to contribute in every way in his power to increase its efficiency, trusting to future legislation to correct such defects as appear from time to time.

As it stands to-day the law contemplates the following war forces at the disposal of the Commander-in-Chief:

1. The Regular Army with a maximum strength of 100,000 men.
2. The organized militia, trained as a National Guard, and limited by the Constitution to service within the United States and for a period not exceeding nine months.
3. A First Volunteer Reserve composed of such organizations of the militia as would volunteer for war in a body with all their officers and men.
4. A Second Volunteer Reserve, to consist of men of previous military training, enrolled in time of peace, and commanded by officers who had qualified for such service before army boards. As previously stated this pre-enrolled force is at present limited by law to but 3000 men, although originally contemplated to number 100,000.
5. Regiments of State volunteers, commanded by officers appointed by the governors thereof.

*See article in the *United Service* for July, 1903, by Brig.-Gen. William H. Carter, U. S. A., entitled "Infantry in War," page 15.

THE STAFF DEPARTMENTS.

If the military emergency following the outbreak of the war with Spain was a severe test of the troops of the line, it was even more so of the staff.

Most staff corps and departments were at the outset badly weakened by drains on their personnel for service with volunteer troops, and again, in expanding to war strength, the extra officers were quite generally supplied from volunteers of little or no experience. The crying need of the hour was *more trained officers*.

The Ordnance Department was confronted with the gigantic task of arming and equipping an army of over 250,000 men, and with making good the deficiency in seacoast ordnance and ammunition. Reserve supplies were at a minimum. As is well known, there were only enough small caliber rifles to equip the Regular Army, and in many cases the States' arms and equipments were in such lamentably poor condition, that they must needs be replaced. This latter drawback was so much in evidence that the Chief of Ordnance of that period has stated that the volunteer forces would probably have been ready for service quite as quickly, had they been newly equipped by the national government, rather than have relied on the defective arms and equipments of their respective States. There was no smokeless powder for the Springfield rifles, and of powder and projectiles for the fortifications, only one-fifth of the required supply was on hand.

Such unpreparedness for the ever possible contingency of war required most strenuous effort by this department, and it may be said that it rose to the occasion with most commendable results.*

The Engineer Corps, with a large percentage of its officers in charge of civil improvements, hurried the completion of many seacoast works, and began the installation of a system of submarine mines†. Its commissioned strength was increased from 109 to 127 officers.

The Signal Corps was suddenly increased from a peace strength of ten officers and fifty enlisted men, to an aggregate of

*By August 31, 1898, the Ordnance Department had increased its daily output of magazine rifles to 370, and of small arms ammunition to 180,000 rounds. It had procured 250,000 sets of infantry, and 26,000 sets of cavalry equipments; had purchased and had under contract, or under manufacture, 336 rapid-fire guns; and had procured a total of 486 seacoast guns or mortars.

†Duties since transferred to the Artillery Corps.

1300 officers and men, and in spite of the handicap of such an unforeseen increase, performed creditable service in the Santiago, Porto Rico and Philippine campaigns, as well as in the maintenance of submarine cables. Its personnel was shown to have been far too small on a peace footing, but it had the advantage, as it will ever have, of being able to draw largely for its recruitment on civilian telegraphers, electricians and mechanics. Of all the staff corps its increase was perhaps most easily acquired at the outbreak of hostilities.

The Quartermaster's Department had possibly the most herculean task before it. Without reserve supplies, it was called upon to furnish, within three and one-half months, clothing, equipage and field transportation for practically 275,000 men; to transport thousands upon thousands of soldiers to the concentration camps, and afterward to their homes; and to organize and maintain on the Atlantic and Pacific seaboards a transport service which ultimately extended to the West Indies, China and the Philippines.

From April 1, 1898, until the breaking up of Camp Wykoff, no less than 17,863 officers and 435,569 men had been transported by rail, and up to September 15th of the same year, 92,836 had been transported by ships. Up to August 31st, 5130 field ovens, 36,800 horses and mules, and 5179 wagons had been purchased by the department. These figures will serve to show the immense responsibilities the officers of this staff department had to face.

At the beginning of hostilities its commissioned personnel was limited by law to but fifty-seven officers, and its necessary expansion had to be made either by the detail of much needed officers of the line, or by the appointment of inexperienced quartermasters from civil life. Both methods were resorted to.

That the nation which postpones preparations for war until the actual declaration of war rarely economizes, is to be inferred from the vast appropriations for this department. During the year 1898 this mounted up to \$130,461,367.75, a large part of which could doubtless have been saved to the government by previous wise legislation, having in view a prudent accumulation of reserve supplies at peace prices, and, as will be discussed later, the organization of an army service corps to handle the stores which this immense sum represents.

The Subsistence Department had, at the beginning of the war, but twenty-two officers, and by the act of April 22 and

July 7, 1898, about 120 additional officers were added to the establishment. Its work in the large camps of concentration, and in the succeeding campaigns was highly satisfactory, and demonstrated its efficiency. Most complaints of insufficient food could be traced to ignorance of the handling of the government ration, and criticisms of the quality of the latter were either founded on misinformation or were due to the deterioration inseparable from every period of field-service.

No army of its size was ever more judiciously and abundantly provided with food. Special foods were selected for troops in the tropics, and an extra sum provided for the purchase of delicacies for the sick in hospitals.

The need of an army service corps was also felt in this department, and it is safe to say that the government would have been saved many thousands of dollars through the more efficient handling of perishable stores.

The Medical Department had but 192 officers to begin the war, and this totally inadequate number was supplemented by the make-shift policy of appointing over 650 contract surgeons, and by adding 118 volunteer surgeons—forty-one of whom were officers of the regular establishment. The President also appointed three surgeons for each of the regiments of United States Volunteers.

The enlisted personnel was so insufficient that approximately 6000 men were enlisted or transferred to the corps during the war with Spain. This force was augmented by the employment of over 1700 female nurses.

The mobilization of volunteer troops found most of the regiments with defective medical equipment or without it altogether, necessitating the immediate purchase of six months' medical supplies for 100,000 men.

Except during the Santiago campaign and the Philippine insurrection, the duties of the medical corps were confined principally to camp sanitation and camp diseases. The large percentage of sickness during the Spanish War and Philippine insurrection must not be taken as an indication of inefficiency by the medical corps, except perhaps, in exceptional cases where laxity in sanitary inspections or failure to anticipate requisitions for supplies by inexperienced surgeons, gave legitimate cause for criticism.

The war demonstrated the absurdly inadequate strength of the medical corps on a peace footing, and the need of a highly

organized field-hospital and ambulance corps for field-service. In no staff department, perhaps, does a state of war cause such a revolution in organization as in the Medical Department, and on no other does the weight of censure fall so heavily for mistakes of omission and commission.

The Inspector-General's Department, which, of all others, must needs be kept filled with its complete quota of highly trained and experienced officers, was most depleted by details to the line. Its strength, already insufficient for holding a large army of volunteers up to normal sanitary and tactical standard was supplemented by the appointment of twenty-five officers with volunteer commissions, some of whom had had absolutely no experience with troops prior to the war, and who, moreover, had no especially natural gift for such service.

The Adjutant-General's Department at the outbreak of war was the only staff department resembling in any particular the General Staff Corps of highly organized armies. For nine years preceding 1898, a division of military information had been maintained as an adjunct of this department, but, through no fault of its officers, had been so dwarfed and subordinated to the routine work of the department, that the outbreak of war with Spain found it without accurate maps of the enemy's territory, and with but meager information of his defenses and military resources.*

In addition to handling the immense correspondence incident to the organization, mobilization, muster-in, and concentration of a vast volunteer army, the adjutant-general's office at Washington was called upon to assist in the preparation of plans of campaign, and subsequently to prepare the necessary orders for carrying these plans into effect. Again, the large amount of sickness in the volunteer camps entailed in itself a vast correspondence, while the personal importunities of politicians, friends and relatives of officers or men, strained the system to the breaking point. Finally, came the muster-out of the volunteer forces, and the reduction of the army to a peace footing.

Too little credit has ever been given this department for its work during the Spanish War—and even later, during the Philippine insurrection and China Relief Expedition. The fact has frequently been lost sight of that the mistakes of omission and

*Due credit should be given Lieuts. Andrew S. Rowan and Henry H. Whitney, who went to Cuba and Porto Rico, respectively, to obtain military information.

commission were rather due to the system in vogue, than to any neglect or inefficiency of the department itself. Practically half a dozen officers performed duties which in most foreign armies would have been developed and executed by half a hundred trained officers of the General Staff.

Looking back on the successes and failures of the various staff departments of the army, an impartial mind must conclude that the clogging of the wheels of administration was principally due to the accumulations of rust during many years of peace. Generally speaking, the methods of requisition, supply and accountability were excellent ones for a small army engaged in nothing more serious than an Indian campaign or a labor riot; but for the needs of from a quarter to half a million men, with dependence on untried and inexperienced staff officers, it was inadequate.

In attempting to analyze the specific causes of staff mal-administration—disregarding entirely the personal error of the officers concerned—the following appear most important:

1. *Lack of a General Staff Corps.*—The necessity for a General Staff would not have been an unnatural deduction from our experiences in the great Civil War. The utter helplessness which Mr. Lincoln experienced at the outbreak of the war is best illustrated by the fact that he actually turned to the Secretary of the Treasury for the initial organization of our regular and volunteer forces in that war,* while his subsequent dependence for expert advice on a succession of officers and civilians led to confusion and demoralization, and certainly contributed in no small degree to the prolongation of the rebellion.

Undisturbed by our experiences during this great war, thankful only that it was ended without disrupting the Union, unmindful of the increasing complexity of warfare during the advancing years, and disregarding the example of the great powers of the world—the Spanish War found us again unprepared in all those things for which a general staff is responsible.

Plans of campaign had not been prepared, nor could they be prepared until accurate maps of the enemy's country were forthcoming. Plans of mobilization had received little or no attention, and no efficient system of the organization, equipment and peace of training our reserves, had been worked out

*See "Upton's Military Policy of the United States," page 233.

in detail. The staff departments failed to pull together according to any settled governmental policy—in fact, there was rarely any policy that was not liable to continual change or amendment, with the shifting about of individual officers of the War Department, and the successive changes of administration. In a thousand ways there was a lack of co-ordination which not only led to miscarriage of plans, but to extravagance in expenditures and lack of harmony in administration.

The purpose and operation of a General Staff has hitherto been somewhat of a mystery to our service, and even now it is not thoroughly comprehended in its details. But to those who have made an earnest study of its functions in peace and war, and the splendid results attained by its industry in foreign armies, it seems very clear that no one defect of our military organization in 1898 contributed so materially to weaken us as the want of a carefully organized General Staff.

This want was provided for by the Act of Congress of February 14, 1903, and took effect on August 15th, following. Besides prescribing in a general way the duties of the new body and of the Chief of Staff, the act provided for changing the designation of the commanding-general, for the obvious reason that under the Constitution the President alone is Commander-in-Chief, and in past years bestowal of the title without the legal right to command had led to endless friction and ill-feeling.

Under existing law, the Chief of Staff is simply military adviser to the President, aided in his deliberations and conclusions by the General Staff, and the law very wisely places under his direct supervision not only all troops of the line, but also the various staff corps—hitherto independent of any military control except that of the President or Secretary of War.

In practice, the General Staff has been classified as the War Department General Staff, and the General Staff serving with troops.

The former has been organized for convenience into three divisions, with appropriate duties pertaining to each: the first, generally speaking, dealing with army administration, the second with the collection and distribution of military information, and the third with questions affecting the technical services, military education and plans of campaign.

Since its organization the General Staff has studied and passed upon a multitude of important military questions, with

credit to itself, and with unquestioned benefit to the army. Being an advisory body, its work is and will continue to be largely confidential in character, aside from those military matters which, from their nature, are properly kept secret. Hence the tangible results of its efforts will rarely convey to the public an adequate comprehension of the full extent of its labors.

If there would seem to have been too great a tendency toward purely administrative work, crowding out many general-staff duties, time and experience will probably correct it. On the other hand, the present close application to mere office work may bring about a lack of touch between the General Staff and the line of the army—a theoretical knowledge only of the practical workings of army regulations, which in past years has afflicted many worthy officers of the staff. This latter tendency should be obviated by causing general-staff officers to make frequent tours of inspection or observation of troops and fortifications, preferably of a different arm of the service from their own, to broaden their horizon, and to place them *en rapport* with the fighting men.

This naturally leads up to the duties of general-staff officers serving with troops, whose duties have hitherto not been specifically defined by orders and regulations. As a rule, two such officers have been assigned to the headquarters of each geographical division—the senior acting as chief of staff, with duties analogous to those of the Chief of Staff of the army; the junior, acting as assistant with other duties undefined. This has led to more or less confusion and misunderstanding, as the duties of adjutants-general and inspectors-general at division headquarters are in most foreign armies general-staff duties pure and simple.

It would, therefore, seem expedient that one of two things be done: (1) Either that the junior general-staff officer at division headquarters be relieved and ordered for duty with the War Department General Staff,* or (2) that the duties of adjutants-general and inspectors-general at division headquarters, be taken over, *in toto*, by general-staff officers.

The latter scheme would harmonize the several classes of duties at the headquarters of troops, would bring general-staff officers in closer touch with troops, and in time of war would

*This has at present been partly accomplished by detailing most of these officers to tours of duty at the Army War College.

better enable them to organize and maintain an intelligence service which is essentially a function of the General Staff.

Such a radical but perfectly consistent course of action would, of course, do away with the necessity of detailed adjutants-general and inspectors-general at the headquarters of divisions, returning these officers to the line of the army, where they are at present badly needed; and would contemplate retaining the permanent officers of these corps for duty at Washington in the offices of the Military Secretary and Inspector-General, respectively.

This would ultimately have but one ending: the incorporation of the Military Secretary and Inspector-General's Departments in the general staff,* as was originally contemplated by the framers of general-staff legislation. The duties of both departments are, as has been noted, so intimately connected with general-staff work that, in the course of time, it is perfectly logical that a consolidation should take place.

One other change in connection with the General Staff has suggested itself: That the two general officers on duty as assistants to the Chief of Staff, or, preferably, two additional general officers should be designated as, and take over the duties of, chiefs of cavalry and of infantry, respectively; in either case to be *ex officio* members of the General Staff.

The same excellent results which have contributed so materially to the efficiency of the Artillery Corps, since the creation of the office of Chief of Artillery, would undoubtedly accrue to the Cavalry and Infantry. These branches of the service are every day becoming more complex in all armies, and creation of the new offices would undoubtedly relieve the Chief of Staff of many vexatious details in regard to armament, equipment and training.

2. *Lack of Trained Staff Officers at the Outbreak of War.*—This second factor of inefficiency in staff duty has already been briefly referred to, in discussing the necessity for the appointment of many volunteer officers to staff positions with little or no experience.

This deficiency has since been partly remedied by legislation creating the office of regimental commissary, and by making the adjutants and quartermasters of regiments extra captains; and by the addition of adjutants, and quartermasters or com-

*See reference to this measure in the annual report of Maj.-Gen. Henry C. Corbin, Commanding the Atlantic Division, for 1904.

missaries, to the organization of cavalry squadrons and infantry battalions. These additional officers with staff experience will, in the next war, give us so many more available officers for duty in the expanded staff corps. Moreover, the custom now obtains in many regiments of detailing the younger officers in rotation, for short tours of duty in the staff departments at army posts, thus giving them practical experience which may later be turned to account.

The permanent personnel of the Medical, Quartermaster's, Commissary, and Paymaster's Departments, and of the Engineer and Signal Corps, have all been increased since the Spanish War, and at present the prospects are good for a further increase in the Medical Department, and that the greatly overworked Ordnance Department may be enlarged to a strength commensurate with its increasing multiplicity of duties. If, to the casual observer, the personnel of these staff departments appears excessive and top-heavy, it must ever be borne in mind that good staff officers are the product of training, and that the outbreak of war is an inopportune time to receive such training.

In addition, extra officers have been given to the army by legislation, permitting officers on the retired list to perform such duties as the Secretary of War may prescribe, thus releasing so many more active officers for duty with troops. Judging from the number of retired officers who volunteered for active duty in the last war, this measure would give us officers for recruiting, and for quartermaster and commissary duties at the bases and along the lines of communication—certainly for home defense.

To supplement the staff officers obtained from the Regular Army, opportunity is now given under the Dick Bill for former members of the regular or volunteer service and of the militia, to qualify as staff officers before the examining boards provided by the law. As a preparation for this examination the same law now permits militia officers to attend army schools, and provides such student officers with travel and subsistence allowances, and with quarters. In addition, the impetus given to military education throughout the United States by a thorough revision of the regulations governing military schools to which officers are detailed, cannot fail to increase the desirable class of young men from whom our volunteer staff officers may be drawn in time of war.

3. *Lack of Touch between Line and Staff.*—That such a

condition existed at the beginning of the late war—more especially with the older class of officers of the staff departments, was an opinion quite frequently voiced by officers of the line of the army. With more or less justice, it was claimed that many staff officers had been so long away from direct contact with the line, as to lose knowledge of and interest in its needs.

During the long period of peace following the Civil War, an idea seemed to have gained credence in some quarters that the *staff* was the army, and the outbreak of war alone brought full realization of the fact that the *fighting men* are the army, and that the staff is created by law solely for the army's care and maintenance. Such a relation between line and staff, limited though it happily was, could not but result in some loss of efficiency.

To partly meet this difficulty a system of details from the line of the army to the staff departments has been initiated and successfully maintained in all the staff except the Medical Department, Engineer Corps, and Judge-Advocate General's Department.* Except in the Ordnance Department and Signal Corps, where it has been difficult to secure desirable officers, the system has appeared to work satisfactorily. That a permanent personnel of staff corps has many advantages in building up *esprit de corps* and in establishing a continuity of trained officers, is not to be denied. But practically and ultimately it is believed that the detail system will give the best results for the army at large, giving (1) a greater number of trained staff officers for an expanded army in time of war; (2) greater familiarity with the needs of the line by the compulsory periodical service with the line; and (3) a trying out of officers in the lower grades, eliminating incompetents and permitting, as the law allows, filling the grades above that of major by continuously detailed officers.

The line of the army appears to be entirely satisfied with the results obtained by the detail system. Its chief drawback seems to be that requirement which often prematurely takes an officer from staff duty upon his promotion in the line, thus begetting constant change. However, as promotion in the line becomes slower, this objection will probably be minimized, and if not, will be a fit subject for consideration by the General Staff.

*This measure was strongly recommended by Secretary Root in his annual reports for 1899 and 1900 finally becoming law February 2, 1901.

In addition, the question of consolidation of the Quartermaster's, the Commissary, and possibly the Pay Departments, will also deserve attention, on the ground of greater simplicity of operation, economy of administration and reduction of paper work. One of the most constant requests received from commissary officers in the field is for control of their own transportation. Certainly there can be no better way of providing it, as well as of co-ordinating the two departments, than to consolidate under one head.

4. *Lack of an Army Service Corps.*—A system which takes from the fighting line a large proportion of trained soldiers for service as clerks, teamsters, blacksmiths, mechanics, and other non-combatant duties, and which, in time of peace, pays these soldiers more liberally than it does the company non-commissioned officers, is not a good system for peace or war. It destroys esprit de corps, cheapens the non-commissioned grades, and in many ways demoralizes the service.

In past wars the civilian element employed by the Government has been a constant menace to good order and even to security, and though amenable to military law, their actions are much more easily regulated if organized into a uniformed, enlisted, disciplined corps, particularly if largely composed of old soldiers of established character.*

The Spanish War and the Philippine insurrection particularly emphasized the need of such a corps. Much worthless material attached itself to the army in various capacities, staff officers were handicapped by unreliable employees, and when summarily discharged—more especially in the Philippines—they actually became a menace to the community.

It can easily be seen that in a great war, such as is now being waged in the Far East, the use in the supply departments of anything but a highly organized service corps would lead to waste, loss of efficiency, and absolute failure of plans. A uniformed, disciplined organization of this character would also render our army far less liable to espionage by the enemy's spies were we involved in a foreign war.

It is believed that such a service corps could readily be organized by transfers from the line of the army, for the versatility of the American soldier and the many trades and professions to be found among the men in the ranks, had time and

*See Report of the Quartermaster-General for 1904, page 32.

again been demonstrated prior to the Spanish War, and was again surprisingly in evidence in that war, in the Philippine insurrection and even in the China Relief Expedition.

The two main divisions of such a corps would naturally be those of transportation and supply, and its organization would again emphasize the expediency of an early consolidation of the Quartermaster's and Commissary Departments under one head. The basis of field organization, and perhaps of that of peace, would preferably be the company, after the present tactical units of the signal, medical and engineer corps, and would facilitate administration and discipline.

The practical duties of the corps would fall under three heads:

1. A remount service, composed of a comparatively small number of non-commissioned officers and men transferred from the mounted service. As they would have more or less permanence of station, its personnel could be reserved for the older, married men of the corps.

2. A post service, to include our present post quartermaster and commissary sergeants, blacksmiths, bakers, mechanics, overseers, teamsters, packers and laborers.

3. A clerical service, to include our present enlisted personnel at post and regimental headquarters, and perhaps the lower grades of clerks at Department and Division Headquarters.

After initial organization such a corps would be recruited by original enlistments and by transfers from the line. One or two depots would give the men from three to six months' instruction in elementary military duties, together with special instruction in such matters as driving single, double, and four-in-hand), packing, horse-shoeing, veterinary first aid, etc.

In time of war the company would be the unit of expansion. The British service contemplates attaching twenty-two companies of the Army Service Corps to each army corps in the field.*

Finally, the advantage of such a service corps would not only be very much in evidence in the transportation and supply services, but it would react on the discipline of troops of the line so favorably that every officer of the line would welcome it as a

*Three companies at the base, two companies on the lines of communication, one company at the advance depot, fourteen companies with the units of the fighting force, two companies as bakers; total, twenty-two.

See Army Book for the British Empire, Chapters XIV and XXI.

relief from the incessant worry and constant drains on the fighting units, inseparable from the present system.

The United States is the only one of the great powers which does not possess such a service corps—whether under the name of administrative, train or intendance troops—and it is high time that we utilize what has been found so advantageous and practical in other armies.

5. *Lack of Reserve Supplies.*—As has already been stated, the Spanish-American War found us with practically empty storehouses.* The Ordnance Department had sufficient magazine rifles to arm the expanded Regular Army, but the volunteer forces carried the old Springfield rifle and fired black powder. The latter great handicap was apparently not thoroughly appreciated by the existing Ordnance Department until the Seventy-first New York and Second Massachusetts Volunteers found themselves at such a disadvantage at San Juan Hill and El Caney.

In addition to the present armament in the hands of the Regular Army and militia, it would seem only prudent that a surplus should be kept on hand of 50,000 for additional regular troops, 300,000 for a reserve volunteer force and an additional 50,000 to replace broken and unserviceable arms in the hands of the militia at the outbreak of war. Likewise sufficient reserve field-artillery and ammunition to equip at least three army corps of volunteer troops, with nine batteries to a division.

In the matter of subsistence stores, no country in the world is so independent of foreign supply, and can be so quickly and conveniently supplied by contract with private manufacturers.

The question of quartermasters' supplies—uniforms, tentage, harness, wagons and the like, representing in storage so much idle government funds subject to loss through deterioration, will always have to be considered in connection with the best interests of the service.

The entire question of reserve supplies is, of course, a General Staff question which should, and doubtless will, receive careful consideration. In the event of war that body will primarily be held responsible by the people of the country that proper provision has been made for such a contingency.

*Secretary Alger has said in his book, "The Spanish-American War": "With empty military storehouses, the supply departments set to work equipping practically 250,000 men. The two bureaus most involved in this task were of course the Ordnance and Quartermaster's Departments."

6. *Governmental Supervision of Communications in War.*—Considering the immense bearing that public lines of communication and transportation have on military operations, with particular reference to the work of the staff departments, it should, in future wars, be one of the earliest enactments of Congress to place the railroads, steamship lines, telegraph and telephone lines of the country, or at least of the military zone nearest the points of concentration of troops, under the direct control and supervision of the President.

There are few officers of Spanish War service with troops who cannot recall the many vexatious delays in the carriage of troops and stores, and the almost complete subordination of the public welfare to commercial interests. No well-informed officer will pretend that lines of public transport can ordinarily be managed as efficiently by army officials as by the regular employees—although history records that it was done in a wonderfully satisfactory manner during the Civil War, in the Philippine insurrection, and by Russian troops in the advance on Peking. What is desirable, however, is such supervision by army officials of railroad experience (regular or volunteers), as will afford the greatest expedition, safety and secrecy in the despatch of troops and supplies, with the minimum of inconvenience and delay to private interests. Likewise, such censorship of public telegraph and telephone lines should be established as will prevent a repetition of the publicity given to each military movement at the beginning of the Spanish War.

If, at the outbreak of hostilities or even when the expedition against Cuba was contemplated, the President had been authorized to take possession of all railroads, telegraph and telephone lines south of the Potomac and Ohio Rivers and east of the Mississippi River, who can doubt that the interests of the Government would have been better subserved, the Tampa concentration would not have been published in the European newspapers, and it is quite possible that the scandalous congestion of traffic in the vicinity of Tampa and Port Tampa would have been prevented or at least controlled.

A notable precedent for such action is afforded by the Act of Congress approved January 31, 1862, giving the President absolute possession and control of all telegraph and railroad lines in the United States, whenever in his judgment the public

safety required it.* For commercial reasons the tendency will ever be for postponement of so radical a measure, until, perhaps, it is too late; but the importance of the question has more recently been demonstrated in the celerity, secrecy and ease with which the Japanese armies have been transported to Manchuria, and again, in the unanimity with which the great powers of the world have agreed on the necessity for government control of wireless telegraphy.

RECRUITMENT IN WAR.

The duration of the Spanish War was so short as to afford little data on which to base a system of recruiting suitable for our form of government, and designed to keep the ranks of both regulars and volunteers filled to the maximum *in a long, severe, or unpopular war*. But taken in connection with some of the serious mistakes of the Civil War, and with certain experiments in recruiting for the Philippine insurrection, our experiences should be able to develop some general policy, worthy of adoption.

As is well known, the stress of political considerations during the Civil War, aided by our dual system of government, forced the Federal authorities at that time into the serious error of organizing hundreds of new volunteer regiments, when every consideration of prudence, economy and military efficiency should have dictated a policy of keeping the ranks of the veteran regiments filled with trained recruits.

As a result, absenteeism increased to an alarming extent, malingering continued unchecked for a long period, thousands of officers and men secured leaves of absence or furloughs, and a large number of convalescents were discharged for disability from general hospitals, when they should have been returned to the colors. So seriously were the Union armies depleted, that in spite of our traditional but mistaken antipathy to compulsory military service, the third year of the war saw recourse to the draft.

On June 15, 1862, such were the evasions of military service that out of a total strength of 144,407 men in the Army of the Potomac, only 88,665 were present for duty. And on June 30, 1864, there were in all the armies 146,130 men absent

*The Act authorized the President "To take possession of any or all telegraph lines of the United States, their offices and appurtenances; to take possession of any or all railroad lines in the United States, their rolling stock, their offices, shops, buildings and all their appendages and appurtenances," etc.

sick, and 32,494 absent with leave—a total of 174,264 officers and men away from the colors.

The statistics of the Spanish War appear to show that if it had been prolonged, similar depreciation of the effective strength of our forces would surely have followed. The surgeon-general's reports show that the total admissions to hospitals increased from 10,208 in the month of May, 1898, to a maximum of 53,705 in the month of August following; and that the death rate from all causes increased from a ratio of 37. per 1000 in May, to 5.82 per 1000 in September. While not so alarming as corresponding statistics of the Civil War, they are sufficiently so to cause serious reflection.

The consequence of this great increase in the sick-report of the army was not only felt in loss of fighting strength, but it reacted on the administrative department of the Government in a most demoralizing way. The hospitals became filled with sick, and what almost amounted to a panic spread over the country. To be sure, much of this was due to foolish sentimentality, but it must be reckoned with in future wars. The War Department was inundated with correspondence relating to soldiers who were sick, or who were supposed to be sick, and was personally besieged by hundreds of relatives, friends and politicians, importuning the authorities for furloughs, leaves of absence or summary discharges. Instances are said to have occurred of half-sick soldiers hobbling into the adjutant-general's office without descriptive lists or other means of identification, and insisting that they be sent home. The general hospitals had been placed under the direct control of the surgeon-general, thus adding to the confusion at Washington by centralizing authority for discharges on surgeon's certificate instead of giving it over to department commanders—a mistake which in the Civil War led to many aggravated cases of malingering and shirking.*

Indeed, it must be very evident to all who have seriously considered the conditions prevailing in the month of September, 1898, that in the matter of army depletion and recruitment we were on the high road to the same grave state of affairs that virtually prolonged the War of the Rebellion.

The experiences of both wars alike point to the absolute necessity of a depot system, whether that depot be a regimental

*Compare General Orders No. 36, H. Q. A., A. G. O., 1861, and G. O., 114, H. Q. A., A. G. O., 1898.

depot, recruiting within a prescribed district for the regiment, or a company depot, recruiting for the battalion of which it forms a part.

It will be recalled that in the years 1899 and 1900, the government tried the home-battalion system with certain regiments designated for Philippine service, retaining the third battalion of each regiment in the United States, and including in its strength all the sick and physically unfit; while the remaining battalions took the field, recruited to their maximum with the strong and able bodied. In practice, the system placed a premium on physical disability and malingering, and was very wisely permitted to lapse. The depot system is a very different one.

The company depot system, which appears to have certain advantages possessed by no other, consists in designating one company of each battalion of a regiment as a depot company at the outbreak of war. The latter at once transfers the bulk of its personnel to the three other companies, retaining its officers and a certain number of non-commissioned officers and privates. It is provided with complete descriptive rolls of all the other companies and receives such data from time to time as will enable it to keep the records up to date, with especial reference to those soldiers of the battalion who return from the front for any cause.

The depot recruits within its allotted district, clothes, equips and trains its recruits; and from time to time forwards this new material to the depleted companies at the front. It receives back, in turn, the sick, the furloughed and the convalescent, and is responsible that, in due time, these absentees from the firing line are sent to their commands.

The company depots being administered and supplied direct by the commanders of geographical departments, the War Department is relieved from all further care—the commanding-general in the field directing the necessary travel to the depot, and the department commander or, it might be, the depot company commander, returning the men to the colors as circumstances might require.* The system is capable of adaptation to cavalry, infantry and field-artillery. With the

*The subject of the depot company has been treated very thoroughly in an article appearing in the *United Service Magazine* for July, 1903, by Brig.-Gen. William H. Carter, U. S. A., entitled "*Infantry in War*," from which the writer of this essay has borrowed many excellent ideas on recruitment in war.

coast-artillery it is believed that a system by which the second and third reliefs in time of war may be obtained from local militia organizations can be easily developed; and on account of lack of exposure to the dangers of field-service, their insignificant depletion will ordinarily require very little effort to keep the ranks filled.

A company depot system will have the following advantages:

1. It provides a healthy flow of trained recruits to the colors, independent of control of outside influences which might impair its efficiency.
2. It provides a suitable organization and assembling point for all soldiers absent from the battalion for any cause, and minimizes the possibility of malingering and shirking.
3. It decentralizes from the War Department the question of administration and supply, and delegates these duties to subordinate commanders.

While many minor objections, such as increased paper work for the men in the field, the question of suitable buildings and training ground for the depot, the difficulty of obtaining suitable officers and non-commissioned officers for such home duty may be urged, all are trivial and may be reduced merely to the tactical question of whether a three-company battalion is inferior to that of four companies. If it be decided in the affirmative, the four-company battalion may be left intact, and the company depot formed by detaching selected officers and men to form a provisional fifth company.

In any case, enough has been said to show the absolute need of strictly regulating the question of supply and demand; and that the depot system is the only system which, under our peculiar form of government, will satisfy all military and political conditions.

MILITARY EXPEDITIONS.

In addition to the arduous field-service between February 4, 1899, and July 4, 1902, incident to what is known as the Philippine insurrection, the Government has in the past six years sent four great expeditions into the field, the respective strength

of which, together with the killed and wounded in battle, are shown in the following table.*

DESTINA- TION	STRENGTH		KILLED		WOUNDED	
	OFFICERS	MEN	OFFICERS	MEN	OFFICERS	MEN
Cuba.....	869	17,365	21	222	101	1,344
Porto Rico	592	15,661	4	4	36
Manila ...	470	10,647	18	11	100
China	191	4,809	2	31	7	160
Total.....	2,122	58,482	23	275	123	1,640

To this might be added the casualties from bullets in the Philippine insurrection: 71 officers and 966 men, killed or died of wounds, while 2818 officers and men were wounded. Altogether, this tabulated statement shows that outside of the Santiago expedition, our casualties from firearms were very small, in proportion to the numbers engaged. The fact, however, that the deaths from all causes in the Philippine insurrection alone amounted to 140 officers and 4234 men shows that, as in all our wars, our most formidable enemy continues to be disease.

From a tactical standpoint it may be said that our expeditionary field-service was of too short duration to revolutionize any great principles of modern tactics. Our armies were duly impressed with the great range and flat trajectory of the modern small caliber bullet, and with the absolute necessity of using smokeless powder. The great value of hasty intrenchments, of fire discipline in connection with the magazine rifle and the difficulty of proper ammunition supply were all valuable lessons. But the most valuable, perhaps, was the experience gained by our officers in caring for their men under abnormal conditions of climate and topography. In general, it may be said that both officers and men have done their full duty wherever called, and have loyally upheld the honor and dignity of the flag of their country.

Equipment.—Our foreign field-service has, in spite of the sentiment attaching to the "army blue," convinced us of the

*Compiled from data given in Heitman's Historical Register of the United States Army, Volume 2.

practical utility of khaki clothing for the field—light weight, washable, cotton goods for the tropics, and the olive-drab, woolen material for the temperate zone. Through the efforts of the Quartermaster's Department a superior quality of khaki is now manufactured in this country, and it is no longer necessary to go abroad for it. Our campaign hats, leggings, blue-flannel shirts and marching shoes have proven good, practical articles. In the China Relief Expedition, there was opportunity for comparison with similar articles of foreign armies, and with the exception of better-fitting garments in which the English excelled, and which is now being remedied in our army, the United States articles of uniform compared very favorably.

Our magazine rifle, popularly known as the Krag-Jörgensen, has been tested under all conditions of service, and been found an accurate, durable and convenient weapon. The demand for a lighter magazine arm, loading with a clip, the magazine centrally located with respect to the center of gravity, and completely sheathed with wood, has led to the production of the new Springfield rifle for both infantry and cavalry—a weapon which, so far as tested, is said to have no superior in the armies of the world. The short rod-bayonet of the new arm is of doubtful usefulness and expediency for infantry, considering the reported hand-to-hand fighting in Manchuria, but is easily remedied, if final reports from the latest war seem to justify a resumption of the knife-bayonet.

The need of an intrenching tool has repeatedly impressed itself in the experiences of our expeditions, but our disinclination to further burden the infantry soldier, especially in a hot climate, with an individual tool, has prevented its adoption. In this connection the infantry soldier has up to the present found no substitute for the blanket-roll, which is superior to it. Our own experiences, as well as those of the English in the Boer War, show a tendency toward stripping the foot-soldier of all extra weight, and carrying the latter on pack-mules or small carts which can keep up to the march of the column.

In the cavalry there has been little or no change in equipment except the substitution of russet for black leather saddlery and the impending adoption of the infantry rifle to replace the carbine. As the new arm will weigh about one pound more than the old, and as no shifting about of the saber and saddle equipments will prevent a preponderance of weight on either

side of the horse, it may be found necessary to devise a new method of carrying the rifle, mounted.

The field artillery's experiences of the past six years with its steel breech-loading guns has been quite satisfactory, but in order to keep pace with the most recent foreign improvements, the artillery is about to be armed with new quick-fire, non-recoil field-pieces, embodying the latest and best ideas on the tactical use of this important arm.

Altogether, the equipments furnished the army by the Ordnance Department during our expeditionary period, has stood every test most creditably.

Transportation.—The wisdom of retaining our present splendid fleet of ocean transports has been repeatedly demonstrated, not only as a prudent military measure, but also as a matter of economy.* This fleet is ready at all times for either routine or emergency purposes, and the Government's experience with chartered transports during the war with Spain has proved that the comfort, efficiency and even safety of troops will suffer under any ordinary system of water transportation by contract. Substitution of one for the other could only be done at a sacrifice of our military efficiency as a great nation, having important island colonies in both hemispheres, and liable at any time to be called upon to defend the Monroe Doctrine with troops.

In the matter of land transportation our foreign expeditions have repeatedly shown the value and utility of pack transportation for countries in which our troops may expect service, *i. e.* those devoid of good roads. Most excellent wagon transportation is always readily obtainable from American factories in an emergency; but well selected and trained pack animals require a much longer period to make ready. Prudence suggests re-organization of the splendid pack-trains of our frontier epoch. The large and well-organized pack-trains between Siboney and Santiago-de-Cuba, and again between Tung-chau and Peking, China, saved many an American soldier from being hungry.

Subsistence.—After much faulty reasoning and some useless experiment, our authorities have wisely concluded that whether in Alaska or the tropics the American soldier requires much the same amount and variety of wholesome food that he has been

*The annual report of the Quartermaster General for 1904 shows that during the past fiscal year the earnings of the transport service, *i. e.*, the difference between the cost of maintenance (including the maintenance of idle transports), and the same service at commercial rates, has been \$762,889.33—a striking balance in favor of the present excellent transport service.

accustomed to from childhood. In all our short campaigns since 1898, the real emergency ration has been the bacon, beans, hard-tack, and black coffee of the Civil War period, and it is extremely probable that they will continue to be with us the sinews of war. In the China Relief Expedition, where comparison with foreign rations was made possible, the unusual variety and abundance of the American soldier's ration was the wonder of foreign officers, and undoubtedly confirmed the opinion that ours is the best fed army in the world.

Sanitation and Disease.—The army's trying field-service under so many variations of climate has given it a valuable experience, which the Medical Corps of the army has fully appreciated. While the American soldier's neglect of health is almost proverbial and will probably continue so with the present short enlistment, the officers have gained practical knowledge of the prevention of camp diseases, and of the absolute necessity of observing sanitary requirements to preserve an effective fighting force. That it has taken some years to acquire this knowledge demonstrates the great importance of disseminating what we have learned among our future officers of volunteers and militia.

THE ARMY IN PEACE.

Since the final campaign of the Philippines insurrection, made notable by the use of humane but highly successful concentration measures, the army has enjoyed a period of peace—if we except the recurring small campaigns against the Moros in the southern Philippines.

The antecedent period had been one of constant field-service. Drills had, perchance, been neglected, and target practice was almost unknown to a large part of the army. While the army that went to Santiago-de-Cuba was largely officered by graduates of the Military Academy, the rapid expansion of the regular forces had given commissions to hundreds of young officers of very limited military education, and with loosely formed ideas on the subjects of subordination and discipline.

Such a condition of affairs required corrective measures, and the army forthwith entered upon a new epoch—the epoch of training.

Discipline.—It has been the experience of many nations that following a period of prolonged field-service there comes to

the army a certain loss of discipline and morale. To this experience our own army was no exception.

In the one item of desertions, the latter have steadily increased from 4.3 per cent. during the year 1901, to 9.8 per cent. during the past fiscal year. During 1904, when demoralization due to Philippine service should theoretically, have decreased, there were 30 convictions of officers by courts martial, of which 9 were dismissed the service, and the sentence of dismissal of 4 was commuted to loss of files. Among the enlisted men the improvement was more marked, there having been 4249 trials by court martial—1026 less than in the preceding year.

Without going into further statistical data, nor into a detailed discussion of the causes of a reduced standard of discipline, these causes may be enumerated as follows: (1) The reaction due to sudden transition from field to garrison-service. (2) A poorer class of recruits due to good times and the present era of high wages for tradesman and laborers. (3) The presence in the army of many young officers of limited military experience, and more or less unstability of character. (4) The abolition of the canteen feature of the post exchange. (5) The want of a military penitentiary for general prisoners now confined in post guard-houses.

That the discipline of the entire army, officers and enlisted men will surely improve under the well-tried methods of antebellum days goes without saying. The weeding out of immoral and incompetent officers should rigorously continue; increased care should be taken in the selection of recruits; and special effort should be made to secure an increase of pay for our non-commissioned officers, for on them more than on any other personal factor, depends an improvement in discipline.

While it is a fact that in dollars and cents our army is probably the best paid in the world, it must ever be remembered that pay is entirely relative, and that the purchasing power of a dollar in our country is barely 25 per cent. of its purchasing power abroad. Next to the restoration of the canteen no other factor would, perhaps, affect discipline so favorably.

In seeking to check the evil of desertion it would seem as though the army had reached the superior limit of improving the soldier's condition and surroundings; further efforts should work along severer lines. Deserters should, in all cases, serve sentence in a military penitentiary, and the States should enact legislation disfranchising all deserters from participation

in State elections, until they have made good the time lost by desertion.*

Military Education.—With the resumption of peace conditions came opportunity for theoretical instruction of officers, which had been necessarily laid aside during the continuance of almost constant field-service. A graded system of military education has been drawn up and put in operation by the General Staff, and while the pressure of work for both students and instructors has undoubtedly been quite severe, the effect of regular study has been entirely wholesome and the results far reaching.

The qualifications for proficiency in the studies of the garrison schools have not been placed so high, but that in a few years we may expect all subaltern officers to have become proficient. At the same time, many young officers' ambition has been stimulated, and for these is provided a progressive course in the Infantry and Cavalry or the Artillery Schools, the Staff College and the War College. As collateral schools of instruction we also have the Engineer School, the School of Application of Cavalry and Field Artillery, the Army Medical School, and the School of Submarine Defense.

Coast Defense.—Under the corps organization which has been given it, the coast artillery has made excellent progress in the knowledge and use of the heavy guns provided on the recommendation of the Endicott Board. At the present time about one-half of the contemplated armament has been mounted.

According to the most recent report of the Chief of Artillery, the present personnel of the coast artillery is not sufficient to man and serve one-half the guns already mounted. Five thousand additional artillerymen are also considered necessary for torpedo defense. A conservative estimate of the number necessary for one relief of the completed fortifications would, therefore, amount to from 75,000 to 85,000 men; and for the three reliefs which the artillery claim as necessary for efficiency, three times that number.

No one can doubt but that under suitable regulations a sufficient force of local militia may be secured to provide for the second and third reliefs in time of war. But one can very easily doubt whether the Endicott Board ever contemplated giving the coast artillery a peace strength greater than all the other arms combined. It would seem that the question of the mo-

*See Annual Report of the Chief of Staff for 1904.

ment is the provision of a proper system of submarine defense, and the completion and proper equipment of the forts already constructed with suitable range-finding instruments before going on with the construction of additional gun-emplacements and the mounting of guns. The future holds out immense possibilities in prospective improvements within the decade of submarines, dirigible torpedoes and even air-ships.

Training.—Two very significant and important features in the practical training of officers and men have marked the return of the army to peace conditions.

The first is the revival of interest in target-practice under better conditions than have ever before existed. The immense advantage of having an army of marksmen was very apparent to us in our war with Spain, and was made even more conclusive by the experience of the British in South Africa.

Our firing regulations have been rewritten to conform to the latest requirements of field-service: expert riflemen now receive an increase of pay, and a friendly competition has for several years been an annual event between the Army, Navy, Marine Corps, and National Guard of the several States.

Under the patronage of the National Committee for the Promotion of Rifle Practice, legislation has been introduced in Congress, providing that a million dollars be appropriated annually for training in rifle practice such citizens belonging to rifle clubs, as desire to become efficient marksmen, for proper shooting galleries, for national target-ranges, and for the issue by the Government to schools and clubs of rifles and ammunition for target-practice. The bill further provides that the names of persons qualifying as marksmen are to be filed in the office of the Military Secretary. Additional legislation is also under way to give increased pay to such soldiers of the army as may qualify as marksmen, sharpshooters, or experts.

It cannot be doubted that if Congress enacts this legislation, an impetus will be given to target-practice in our country that it never had before. The native American has ever had an inborn taste and love for good marksmanship, and proper encouragement is all that is needed to provide the country with an army of sharpshooters.

The second significant feature of the peace period has been the wide-spread interest in field exercises, and the joint partici-

pation in army maneuvers of the Regular Army and the organized militia.

Maneuvers have been held at Fort Riley, West Point (Kentucky), American Lake (Washington), Atascadero (California), and Manassas (Virginia); the State of Ohio mobilized an entire division of its National Guard and held successful maneuvers at Athens; and the army and navy, during the years 1902 and 1903, participated in joint maneuvers off the Atlantic coast.

The effect of this practical work in the field has been highly beneficial to both regulars and militia, to officers and enlisted men, and has more than offset the continued theoretical work of the officers during the past two years. It has been especially advantageous in giving superior officers opportunities to exercise command over such tactical units as they might command in war. Captains have commanded battalions; majors and lieutenant-colonels have commanded regiments, and colonels brigades. The solution of tactical problems was in many cases a practical and convincing test of our officers' ability to exercise command, and the intense realism with which all entered into the war game, was as gratifying as it was valuable.

Our maneuvers of the past few years would seem to have given us the following requirements as best suited for future field exercises of this character:

1. For the present, participation in maneuvers of no greater tactical units than one division opposing another division—each division possessing the necessary divisional cavalry and field-artillery.
2. For maneuvers in which the militia participate, elementary problems at first, progressive in character.
3. Rest days between maneuver days, devoted to lectures and discussions by officers, and instruction of the enlisted men, in hasty entrenchments, first aid, and the like.
4. Participation by the militia of each State for a period not less than ten days; the regular troops to remain in camp at least twenty days, and participate in two sets of joint maneuvers with the militia.
5. Change of location of the maneuvers each year, or alternate years, to new and unknown terrain.
6. General officers to render special efficiency reports at the completion of the maneuvers, on all officers above the grade of captain, who have exercised command, with a view to the re-

tirement of those who, in repeated maneuvers, demonstrate their inefficiency from either physical or mental defects.

7. New legislation giving the commanding general of maneuver camps military authority over all militia participating. At present, no such control exists.

The Militia.—Some description of the Act of Congress of January 21, 1903, to promote the efficiency of the militia has already been given, as well as some mention of defects in the law requiring remedial legislation. It remains to speak of the effect of the law on the organized militia during the past year.

In the matter of rearmament, each State and Territory has received sufficient United States magazine rifles and carbines to completely arm the militia, together with a suitable amount of small caliber ammunition. The manufacture of the new 3-inch field-guns, with which it is contemplated arming twenty-six field-batteries of militia, is progressing satisfactorily, and the guns will probably be ready for issue late in the year 1905.

The reports of the special inspections of the militia by Regular Army officers, which fixes their right to a share of the allotment under the law, showed a marked improvement in general efficiency, and resulted in the disbandment and muster-out of many companies which could be dispensed with. Of the 8479 officers and 106,787 men of the militia, 82 per cent. of the officers and 78 per cent. of the men were present at inspection; encampments had been held in thirty-one States and Territories in addition to participation in the army maneuvers already referred to; and the Military Secretary has estimated that about 75 per cent. of the entire strength would respond to a call for service under the Federal government. The total strength of the organized militia on October 1st of the present year (1904), was 115,937 officers and men. Under that section of the militia law which permits militia officers to attend army schools, thirty-three militia officers are undergoing instruction; twenty at garrison schools, four at the Infantry and Cavalry School, one at the Artillery School, and eight at the Army Medical School. The Government has made provision for a maximum of 208 militia officers at army posts, and it is believed that a much greater number of officers will avail themselves of the instruction next year.

As to the working of that section of the militia law which provides for the enrollment of officers for a future volunteer force, it is significant that only thirty-four applications were

received from the several States. It seems imperative that legislation be enacted as soon as practicable, providing for a national volunteer reserve. Not until then will qualified officers present themselves in sufficient numbers to assure the enrollment called for under the law.

CONCLUSION.

Looking back on the many stirring experiences of our army during the past six years, history records many grave mistakes of omission and commission—many, to our shame, that were but useless repetitions of similar blunders during the great Civil War. The question naturally arises, has the Government really profited by these experiences, and does it at last appreciate the Nation's military weaknesses and necessities? If war were declared to-morrow, would the people, with a perversity unworthy of our boasted intelligence, still cling to the false theories of the past?

We shall hope not, and at the same time we must confess that our hope is tinged with a shadow of doubt. The national memory is a short memory, when it deals with national weaknesses that are past. We are vain of our phenomenal prosperity, our readiness of resource; and the historians of our past wars love to dwell on the Nation's greatness in rising superior to every obstacle, in triumphing over almost insuperable difficulties. But the national conscience fails to respond to reminders of the useless blunders that sent thousands of gallant soldiers to their death. We are wont to be charitable, and to charge all our failures to profit and loss.

Let us not ignore the lessons of the past, purchased at the cost of so many lives and so much treasure. Such a terrible mistake in 1870 gave France a humiliation from which she is even now suffering, and more recently shook the prestige of the great British Empire.

We have at a bound taken our true place among the great nations of the earth, and are now reckoned among the arbiters of the world's peace. With increased prestige has also come a thousand new and complex responsibilities which will continue to increase with the years. Let us remember that "*Peace is enervating, and no man is wise enough to foretell when soldiers may be in demand again.*"

LINES OF INFORMATION. THEIR DEVELOPMENT AND THEIR VALUE TO STRATEGY AND TACTICS.*

BY BRIGADIER GENERAL A. W. GREELY, CHIEF SIGNAL OFFICER.

PRESIDENT ROOSEVELT, at the beginning of a military epoch in America—the dedication of the War College—tersely and pertinently outlined the precarious tenure of peace conditions to-day in the statement that an opulent, aggressive and unarmed nation invites humiliation and disaster. He wisely added:

The army will do well in war merely in proportion as it has been prepared well in peace. Defeat will come inevitably if the preparation is put off until the war begins, and victory will come if it has been prepared for in time of peace, and on no other terms.

The truths thus forcefully enunciated to the country by the President must be apparent to every student of military history.

Perhaps the preparatory methods for an efficient state of national defense have never been better formulated than a quarter of a century since, by a Belgian officer, Major Renard, in his "*Cours Abrégé de Tactique Générale*." He says:

The nation which neglects its staff; which does not apply itself to the constant improvement of its military establishment; which does not keep pace with scientific progress as regards its armament, the instruction of its troops, and the recruitment of its officers; the nation committed to such policy advances to future disasters, and prepares itself for most bitter humiliations.

As regards the American Army, its methods of promoting efficiency are now superior to those of any preceding period. A general staff, carefully selected and duly organized, has entered on its novel services with zeal and energy; if the scope and character of its duties are somewhat vague and indefinite, it must be borne in mind that evolutionary methods are necessarily tentative. Previsionary efforts are lacking in no department for the application of current industrial inventions to military purposes. Military instruction has been co-ordinated and improved to an unprecedented extent, and it is believed that any slight deficiencies in theoretical training, which

*Read at a General Meeting, Military Service Institution, Governor's Island, N. Y. H., Jan. 11, 1905.

time and experience may develop, will be promptly remedied by the general staff. Our military academy furnishes graduates of the highest military and manly types, while the few remaining commissions are conferred under sound legislation and by wise executive action.

The constant improvement of any military establishment is, however, a problem of infinite difficulty. Among the most intricate factors are those connected with the timely modification of tactics, organizations and appliances, so that under changed conditions the greatest benefits may accrue from modern inventions and advances.

Let us consider the transmission of military intelligence, which in this paper is designated as Lines of Information, a problem that has lately forced itself to the front, although practically ignored by current military authors as to its more important phases. The way should be cleared by a few definitions.

Strategy is the art of so directing an army as to force the enemy to abandon his campaign and field operations, or to compel battle under the most favorable conditions with reference to numbers, situation and subsequent advantages.

Tactics is the art of directing the movement of troops in campaign so as to best utilize special qualities of troops, advantages of terrain, means of communication, and lines of information.

Of information the German writer, Clausewitz, says:

By the word information we denote all the knowledge we have of the enemy and his country; therefore, in fact, the foundation of all our ideas and actions.

Schellendorf says:

Means of rapidly sending information should be provided.

James considers as one of the most important modifications in modern war:

The greater speed with which intelligence is obtained.

In this paper information also includes all knowledge of one's own troops and country essential for administrative, strategic and tactical purposes.

It should be further understood that the compiling, distributing, filing, indexing and digesting of information are viewed as functions of the General Staff and not included, save

incidentally, in Lines of Information. The operation of such lines covers all methods for the transmission of military information to and from the entire army, and the interference with similar operations by the enemy, whether direct or indirect.

Lines of Information then cover the exercise of telegraphic censorship; the general control of military mails; the construction, operation and maintenance of telegraphic lines—flying and semi-permanent; visual signaling—flag, lantern, bombs, heliographs, Ardois flashlight, etc.; the preparation of preconcerted signals; the coding and translation of ciphers; ballooning and military aerostation; the use of carrier pigeons, etc.; the interception and translation of the enemy's military information; the application of wireless telegraphy; the laying and operation of submarine cables; the institution of telephonic lines and exchanges—field and camp; the fire control and direction systems for coast defenses and for co-operation with naval forces; and the establishment of special telegraphic and cable circuits (commercial and military lines combined) for intercommunication with naval or military forces operating abroad.

The indispensability of military intelligence has been set forth by all modern writers on war, and no statements are necessary on this point. The value attached to its speedy transmission, is, however, set forth briefly by citations from competent authorities.

Lewal says:

To obtain information signifies nothing intrinsically; it is its transmission in seasonable time which permits its utilization and imparts its value.

As situations rapidly change, it is important to furnish useful information with the greatest rapidity.

Transmission should be uninterrupted and without delay, for frequency and rapidity are essential elements of information.

The British authority, Colonel Furse, in "Information in War; its Acquisition and Transmission," gives scant attention to transmission of information during field operations, though dwelling fully on methods during sieges. As to its indispensability he says:

The success of important operations mainly depends on the rapid transmission of orders and information in war.

The neglect of important means for rapidly transmitting information can only rob a commander of many favorable opportunities for gaining important advantages, if not securing his troops from destruction.

While admitting that there is no "valuable instruction on this duty for the guidance of all concerned," Furse discredits telegraphy for cavalry divisions, considers visual signaling of rare adaptability, and falls back on couriers, light vehicles and especially cyclists. As an ideal situation he adds:

Where a special Telegraph Corps is formed, this might unite all means for a rapid transmission of information.

Quoting from May, "Imperial Defence":

Intelligence in war is the first requisite to successful strategy. Without means of communicating information, the labor of collecting it is vain. Early intelligence in naval warfare is as valuable as a reinforcement of many ships. Rapid cable laying in time of war is a problem of imperial defense of the first importance.

American writers are silent on this subject, though Wagner, in his excellent "Organization and Tactics" was first to suggest an adequate organization. Presumably, and wisely, he considers it a technical subject demanding special treatment.*

The modern development of Lines of Information and their evolutionary application to strategy and tactics, will now be considered. The Crimean War of 1854 and the Italian struggle of 1859, while suggesting possibilities, scarcely offer examples of realization.

The American Civil War, so prolific in the application of modern science to the art of war, exploited lines and methods of information to a hitherto unprecedented extent. Ballooning, visual signaling, aerial and submarine telegraphy, supplemented, extended and replaced, according to circumstances, the ordinary means of scouts and couriers.

The importance of the work and the necessity of co-ordination were inadequately recognized, and the three methods, now consolidated in the American Army, were operated by three unrelated and unharmonious organizations, each viewing the others as rivals.

The great tactical value of visual signals was evident at Yorktown, in connection with the balloon; at Malvern Hill in directing the fire of the co-operating gun-boats and at Fort Fisher during actual assault in changing the fire of the navy from traverse to traverse, as the Union forces gained ground.

*Note.—Several years since, however, it was set forth in my annual report, that "A competent general views visual and electrical signaling as indispensable to the success of important strategical operations, wherein complete control of separate and co-ordinate commands is necessary.

The flanking movement of Lee for the earliest invasion of Maryland was first reported from a signal station. At Gettysburg the visual signal stations were potent factors in tactical movements at critical periods. It was a signal message from Kenesaw Mountain to Allatoona that ensured the safety of Sherman's supplies, and permitted pursuance of his campaign.

It is needless to say in this electrical age, that the military telegraph was the most valuable of the three branches, and that, while almost entirely used in the early war for administrative purposes, it was gradually applied to logistics and strategy, from pure force of circumstances in some cases, and from the military genius of the commanders in others.

Patterson was unprovided with electric means of communication, and his report of Johnston's march to reinforce Beauregard reached the War Department so late that the first battle of Bull Run was untimely fought.

In 1862, McClellan, in addition to utilizing balloons, was the first general to apply the military telegraph to systematic tactical purposes in war. On June 21, 1862, at Gaines Mill, was opened a telegraph office, practically on the line of battle, for the purpose of receiving information and transmitting orders, doubtless the first time in actual conflict. It must be admitted, however, that the full value of military telegraphy was not fully realized, since the army of the Potomac at Harrison Landing was for a month, seventy miles distant from its base of military information, the telegraph station at Jamestown Landing. It is notable also that Meade fought Gettysburg without any telegraphic base of information, depending on visual signals and couriers.

Grant, likewise, was without telegraphic facilities between his headquarters and Pittsburg Landing, and was at a disadvantage during the battle of Shiloh. With his great inherent military ability, Grant profited by experience, and throughout his later western campaigns was invariably connected by electric lines with all bases of information, and utilized them to great advantage. When Grant became commander-in-chief, first of all great generals, he applied Lines of Information not only to battle tactics but to strategy in its widest sense. Establishing his headquarters with Meade's army in Virginia, in May, 1864, he daily received telegraphic reports from the commanders, and gave orders regarding the operations of Meade in Virginia, Banks in Louisiana, Sherman in Tennessee, Butler

in Virginia and Sigel in West Virginia. Later there was under his direct control a military force of more than half a million soldiers, operating over a territory of 800,000 square miles in extent. It was these Lines of Information that rendered possible that strategy of Grant's, which, through concerted action and timely movements, shortened the duration of the Civil War, by preventing the reenforcement of Lee's army in Virginia.

Sherman's quickness in saving his base of supplies at Altoona by the conjoined use of the telegraph and visual signaling, has been mentioned. Had his Lines of Information failed at that juncture, the results would have been most unfortunate for his army and the country.

In connection with the general question, Sherman says:

The value of the telegraph in war cannot be exaggerated as was illustrated by the perfect concord of action of the armies of Virginia and Georgia in 1864.

It is thought that few realize the extended operations of military telegraphy in the Civil War, during which there were constructed and operated no less than 15,389 miles of land lines and cables. It is not necessary to further dilate on the practical value to strategy and tactics of the American Lines of Information during the war in question. However, many lessons of this great conflict failed to fully impress the military world at large, which, in many instances, looked with contempt, not unmixed with ignorance, upon the operations of the American Armies.

The Franco-Prussian War of 1870 wonderfully stimulated military criticism and research. It is therefore profitable to consider briefly the literature of the following decades on Lines of Information, and the application of such theories to various armies.

Hamley, pointing out the constant use by Sherman of telegraphs in his flanking operations in Georgia, indicates the overwhelming value of field telegraphs in enabling a general to impress unity of time and purpose, during decisive and co-operating movements along an extended front.

In 1876, General Simmonds, in urging on the British Parliament an increase and reorganization of military telegraphs, testified that: "Not even the smallest war could be carried on successfully without them."

Wolesley forecasts very great advantages in actual battle to the general of

The nation and army that shall be the first to thoroughly work out and apply a sound system of telegraphy as an aid in all tactical combinations.

Despite such sound advice Great Britain long failed to perfect its system, which remained a makeshift organization with scattered duties and limited functions. In 1892, it had on a war footing, only one telegraph battalion for the two army corps. Its limitation of functions is shown by an extract from its official "Manual of Telegraphy," 1897.

It is probable that in future campaigns, the telephone may be utilized also as a means of communication.

Its inadequate material was instanced by its telegraph lines stopping at Dongola on the Nile for lack of river cable. While its telegraph service has trained enlisted men, its officers are temporary, serving by detail from the Royal Engineers. It was the versatility and skill of such officers, however, that produced notable results in Ashantee, the Soudan and especially in South Africa, where greater facilities were afforded than ever before.

Germany has been always alive to this subject, although Schellendorf indicates the limited application twenty years since:

Field telegraph detachments are intended to keep up telegraphic communication between the headquarters of armies and other independent commands and the headquarters of the commander-in-chief; or between several armies or army corps carrying on active operations.

The Germans established a telegraph system in 1859, which was promptly reorganized as soon as the application of telegraphy was notably effective in our Civil War. In its war with France it utilized the military telegraph to a modest extent, having less than one hundred field officers and about 1600 miles of line. As a rule, only the general and corps headquarters were connected. Doubtless captured permanent French lines subserved German purposes and obviated the necessity of a very extended field system.

Significant and important extensions have been lately made. In 1899 was established a separate corps, "Troops of Communication," composed of one balloon, three railways and

seven telegraph companies, commanded by a major-general under the emperor directly. Its insufficiency for the twenty-three army corps soon became obvious. In 1901 action was taken to supplement this force by a system of regimental details, under which selected officers and men are instructed by the permanent force for a year.*

The application of field telegraphy to war was initiated by Spain, in Morocco, 1859. The late extension of visual signalling and the increase of the battalion to a regiment of telegraphers indicates Spain's present policy.

Russia has long realized the indispensability of telegraphs to success in war. Its armies strung in the Balkan Campaign, 1580 miles of wire, and in the Asiatic Campaign about 1800 miles. In Armenia, 1877, the Turks ignored telegraphic facilities, while the Russian commander through his Lines of Information not only rescued Lazaref's army from an apparently fatal situation, but also arranged and directed by telegraph the combined operations which destroyed the Turkish Army under Mukhtar.

Though France was early in applying electrical communications to war in the Crimea, Algeria and Italy, its system failed under the strain of war in 1870. The necessity of thorough technical training, consolidation and co-ordination, was emphasized in the report of the Fifth Commission to the National Assembly in 1871. Of the war service Baron Eschasseraieux says:

Our telegraph service exhausted itself in efforts frequently sterile to accomplish results with the inadequate means furnished it.

By all means the most forceful and far-seeing writer on this subject is General Lewal whose "*Études de Guerre*" are among the most thoughtful and comprehensive, especially as to practical details, of any modern essays that have come under my notice. Lewal's studies on military information, extending from 1860 to 1882, form two volumes, "*Tactique des Renseignements*". Brief extracts indicate the tenor of his conclusions:

Information service fails especially because the world is ignorant of its principles, processes and mode of action.

The transmission of intelligence demands special organs.

The knotty problem is to opportunely deliver information to the commander who awaits it to make his decisions, and to issue appropriate orders or warnings to distant units.

*NOTE.—As this paper goes to press it is announced that the German budget of this year provides for an additional telegraph battalion.

Transmission is the more important as distances increase and obstacles augment.

Visionaries have often affirmed the necessity of uninterrupted relations between the elements of any army without indicating the possibilities and methods of their realization. Communication by wire is the most complete method when it is available.

Most armies give some telegraphic training to non-commissioned officers and troopers; it is lost time. Those partly informed are always incompetent; specially trained men are necessary.

For outposts, advance guards or investments, the field telegraph or telephone can be advantageously employed. They become impracticable for great distances. The laying of the line is impossible under conditions of rapidity and distance, which are involved in exploration by cavalry, or even by infantry.*

Line repairs can be completed; creations, no.

As situations rapidly change, it is important to furnish useful information with great rapidity, and especially to be able to question observers and call their attention to essential things. The electric telegraph fulfills perfectly the purpose, but it can only be employed very exceptionally.

Of flying telegraph lines, Lewal adds:

Known systems are complicated, costly, very heavy, and do not produce desired results. Inventors will doubtless solve this problem practically, but such a system does not exist to-day.

Of the telephone, which gave great promise originally, he says:

Extensive use is impracticable; nevertheless, with relays and the prospective perfection of the telephone, it will not always be impossible to unite the main part of the grand guard to the commander of the regiment to which it belongs; the support to the numbered posts of the grand guard, these to picket posts, and these last to the signalists. Numerous attempts by different nations have resulted in numerous difficulties.

Scientific progress will doubtless afford a practical solution. Whatever this may be, the telegraph and telephone always have disadvantages of fragility and slowness of installation. Save in rare cases electrical and telephonic relations with advanced posts cannot exist.

The most profitable method will consist in a combination by prolonged electric lines to the end of the visual lines which penetrate to all desirable points. This thoroughly indicates the propriety of having only one personnel provided with all intelligence necessary to operate it.

It is to be added that military writers of the past twenty years have failed to seriously consider this subject. Derrecgaix, "Modern War", 1884; Gall, "Modern Tactics", 1897; James, "Modern Strategy," 1903; Maguire-Tovey, "Elements of

*NOTE.—This and several similar extracts illustrate, by comparison with accomplished results, the great success of the military experts of to-day in completely solving electrical problems of field transmission, which were impracticable twenty years ago.

Strategy" 1903; Baden-Powell, "War in Practice", 1903, and many others barely allude to means of rapid transmission.

The soldier has not waited on the essayist. Although adhering to the pernicious system of half-trained details and providing an inadequate skilled personnel, yet every European army recognizes by its steadily augmenting organizations, that Lines of Information are potent and indispensable factors in tactical and strategical operations.

The only standard authors, Lewal and Furse, advise co-ordination of Lines of Information under one command, as was done in Germany, 1901, and in the United States, 1891.

In the American Army the permanent force was absurdly small, being but two men to the thousand in 1897 for the technical duties, electrical, balloon, etc., while not less than fifty-seven per thousand were detailed for visual work. Material was similarly inadequate. The permanent force was very highly trained, and formed an effective cadre for the greatly augmented force of 1898. It is now nineteen to the thousand, practically two per centum.

Lines of Information are no longer ideal and experimental, for their practical operation is the story of the field duties of the American Signal Corps for six years past, in China, Cuba, Porto Rico, and the Philippines. Its work placed McKinley within five minutes of the south coast of Cuba. It first located Cevera's fleet, and first announced its destruction. At Santiago it stretched telephone wires along Shafter's front from San Juan Hill to Aguadores, reconnoitered Spanish roads from a balloon on the skirmish line, and directed Sampson's fire on the besieged city. In Porto Rico it opened up cables; and the telephones and sounders of its electric lines, keeping pace with every division, were in the forefront under fire. In China it followed Chaffee's columns, and, entering Pekin on the heels of his victorious troops, kept alone the world in touch with the imperial city for a week. It repaired Dewey's cable at Cavite; and directed the fire of the Monadnock at La Loma. In the Philippines its 10,000 miles of constructed and maintained telegraph lines and cables connected all tactical points throughout the entire archipelago, whether in the field or camp, under fire or in quiet intervals; not only did its campaign work shorten the insurrection, but also its existence later rendered possible great reductions of forces without endangering peace, more than once saving a garrison.

Of its services, the investigating Commission of the Conduct of the War with Spain, reported:

The chief signal officer and the officers and men under his command were equal to every emergency, and the work was so quickly and successfully done that there has not been a complaint filed from any source. . . . The services of the signal corps during time of war have become of inestimable value.

Of its work in the Philippines, Lieutenant-General Chaffee said:

The telegraph is a very potent factor in contributing toward the maintenance of peace and order.

Major-General MacArthur, after declaring that it more than doubled the efficiency of his widely scattered command, adds:

Wire service simplifies everything, makes unity of action possible, insures concentration of troops on threatened points, and altogether is of such importance that it is impossible to say too much in its behalf.

Brig.-Gen. J. Franklin Bell, with reference to his campaign in Southern Luzon, says:

Had it not been for the exceptionally valuable service rendered by the signal corps, I feel certain that I could not have accomplished in six months what has already been accomplished in six weeks.

Nor have Lines of Information been operated with efficiency in the American Army alone. In the Asiatic War, the operation by Japan of such lines, whether in transmitting known information or in suppressing that of value to the enemy, has been conducted with a skill and on a scale hitherto unsurpassed, even if equaled.

Mr. Frederick W. Palmer, in his graphic book, "With Kuroki in Manchuria," repeatedly notes the value and frequency of Japan's operations as to censorship, telegraphy, telephony, ballooning, and visual signals. To quote briefly, from many instances, Palmer says:

The Japanese method of keeping their secrets from outside communication was simple and drastic. For a week before the battle Korea was sealed. No telegrams, no letters were allowed to depart.

The sound that interested Kuroki most was not that of firing, but the click of the telegraph instrument, which left nothing to the doubt of vision, but told him exactly what each unit was doing.

Meanwhile, the Japanese general—he of a race that only a half century ago fought with swords in battles where the leader must lead with his own fencing arm—sat in safety, his staff around him, in touch with all his units, remedying errors and meeting situations as they

appeared. But this general had taken over the formulae from the latest school—Von Moltke's—and applied them.

We were isolated (Kuroki's flanking movement at Liao-Yang). The staff gave the order to retreat. But no sooner were the orders for the Twelfth Corps to fall back received over the wires, than communication with grand headquarters (cut off shortly before) was resumed.

On the reverse side of the hill of Kwantun (before Liao-Yang), the telegraphers and the field-telephone men were always busy bringing news from our divisions, our brigades, our regiments, our batteries and most important of all, from Oyama. Upon the span of wire through the cornfields depended the staff knowledge of the position of our own corps and all the work of other corps which affected our own. When the key could sound for grand headquarters and no answer came, the position would be that of a battleship in evolution whose rudder had refused to respond. If the telegraph commands a mobility of organization on a large scale impossible in Napoleon's time, no chief of staff can quite forget that the execution of his plans hangs by a thin thread of copper.

Time fails for even a general consideration of the various Lines of Information, but a few suggestions are advanced regarding field telegraphs for an army in campaign. These opinions are the outgrowth of an extended experience in telegraph construction and maintenance in many parts of the world, involving more than 20,000 miles of land lines, submarine cables and wireless sections, of which 15,000 were installed under war conditions in foreign countries.

Army and corps headquarters should be connected with the base of operations by permanent trunk lines, which should carry at least two wires and an additional wire for each 10,000 troops. Angular lines are more useful than strictly perpendicular lines, affording quicker transmission by courier to and from troops unprovided with wire facilities.

The trunk line to general headquarters preferably follows a railroad or the main highway, thus insuring comparative freedom from hostile interruption and quick repair. In a large army the corps on the extreme flanks should be reached direct from the base over separate roads. These separate main lines should be bisected by a lateral line at road junctions, etc., thus providing alternate routes—a matter of vital importance for insuring uninterrupted circuits. Telegraph offices should be maintained at suitable points, intersecting roads, etc., not more than ten miles apart on trunk lines, or five miles on temporary lines, manned with operators and repairmen. A mounted force should constantly patrol such sections as are indispensable for general tactical movements.

Branch lines, permanent or temporary, as circumstances dictate, should be run from corps headquarters to divisions, to brigades and to any smaller unit occupying an important position. While the corps systems should be operated independently, they should not only be under general control of the chief signal officer of the army, but should also have their circuits so arranged that the commanding general can be directly connected by wire with any command. Trunk and branch lines should be built and operated with standard material and instruments. Selected officers should, however, be additionally provided with special field sets, so that communication in emergency can be had by either telegraph, telephone or buzzer.

Flying lines should connect designated offices, on the trunk or branch lines, with every tactically important point in front or flank, whether it be a picket, outpost, supporting party, a battery, regiment or detached command, and whether in action or support. Reconnaissances of importance should be similarly kept in electric touch with the main army. Flying lines should be entirely operated by field instruments, which work either sounders, telephones or buzzers.

Telephone systems for administrative purposes should be, wherever possible, separate from the telegraph.

Flying lines of No. 18 or larger wire, should be carried by lances, wherever other supports are unavailable. Lighter wire, whether bare or insulated should for temporary and rapid installation, be thrown on shrubbery outside the traveled road. River and road crossings require light cables or strong steel wire for spans.

Lateral lines, parallel with the army's front, for general purposes are most inadvisable. Branch lateral lines may, however, be established along a front protected by entrenchments. Lateral flying lines should be the shortest possible, simply connecting the flanks of several commands or contiguous outposts and pickets.

Every telegraph system should be supplemented by visual signal stations for both day and night work.

In conclusion, it is pointed out that two nations, Germany and the United States, in co-ordinating their systems of military education, have recognized the primary importance of these Lines of Information.

In Germany, the War College was supplemented in 1903 by the Technical Military Academy, in which one of the three

courses is devoted to communications. In urging the establishment of this academy, the report says:

The constant progress of science places at the disposal of military art new means of indisputable value. Without the aid of such resources it will be impossible to provide for the needs of, or to properly maneuver great armies. * * *

This necessity is especially evident when we pass to the application of electricity and optics. Specialized study is necessary to determine appropriate means and suitable methods for war, where conditions differ so materially from those of peace.

The General Staff of our army in formulating our military education has wisely instituted similar special schools, and the value of Lines of Information has thus received its first official recognition. The Signal School to be opened this year at Fort Leavenworth, includes in its courses signal engineering, and specifically provides for instruction in the dissemination of information.

It is unquestioned that the changed conditions of modern war henceforth involve deeper formations, flanking attacks, widely extended fronts, and enlarged areas of field operations. These imply for all armies in the future, steadily increasing Lines of Information, of which, during the past six years practical and brilliant applications in battle and campaign have been afforded, first by the American Army, and later by the British, Japanese and probably Russian forces.

It is perhaps not too much to claim that the energy and resourcefulness of the American Army initiated a new epoch in Lines of Information, when in the war with Spain it applied electricity to military uses on a scale and with a success hitherto unprecedented.



OUR NEW INFANTRY DRILL REGULATIONS.

BY LIEUT.-COL. CHARLES J. CRANE, EIGHTH INFANTRY.



HE battalion at this post has drilled according to the new system from the very beginning of the book to the end of the school of the battalion, excepting some of the formations for attack and defense, and the officers have studied and recited every page of the text.

The writer was instructor, both in the school-room and on the drill ground.

Some of the more important changes from the old system will be noted in the following remarks. It is believed that a little too much expedition was used in getting the book ready for use, and it is more than likely that the result will be a host of requests for interpretation of certain paragraphs not clearly understood.

One must keep well in mind the previous lessons, for instance, paragraph 23 must be remembered and followed in handling a battalion in line of squads and in line of skirmishers.

But once well learned, it is believed that the arrangement of the text will be satisfactory. Many valuable general principles have been added, relating especially to extended order movements, but it is hoped that in the very first revision that old excuse for lazy and indifferent drilling will be omitted.

Reference is here made to that old provision taken from previous drill regulations, to the effect that "the posts of the officers and non-commissioned officers are specified, but as instructors they go wherever their presence is necessary".

The posts given the instructor by the text are almost invariably the best for him as instructor, for from such posts almost invariably he can best observe the manner in which the men execute the movement, and seeing the errors committed, can best understand how to apply the remedy. Otherwise the same mistakes may be repeated to the end and may never be corrected by that particular instructor.

The writer has devoted unusual attention and study to this particular point, and freely states his belief that no other provision in our drill books has caused so much bad drilling, because of the excuse it has given the perfunctory instructor

to take his ease. In the setting up exercises the pruning knife has been used freely, but not freely enough.

It is not believed that the old balance step ever did any good, and the old double step should have remained in the seventeenth century where it belonged. These are now the 4th and 5th exercises.

If the addition of a word or two will prevent honest difference of opinion, and thus avoid requests for interpretation on certain points, it would seem that the additional explanation should be given. In paragraph 50, the addition of the word "while" after "right about" and before "taking four steps in place" would leave no doubt in any reader's mind as to the meaning of the text, which without it is a trifle obscure. Similarly, many do not know whether or not "In place, Halt", paragraph 13, includes execution of order arms.

In the "Manual of Arms" we find the "left shoulder arms" and the various combinations entailed by it.

It is easy enough to execute, but the need for any such addition is not seen by the writer who, however, appreciates each change toward having uniformity in the Manual, and believes in no slipshod performance of it. He moreover believes in a simpler manual.

In the different schools there is gradual progress, the soldier being instructed early in extended order movements, and this method is undoubtedly wise. Paragraphs 116 and 117 give us the greatest surprise contained in any part of the book.

We have made a radical departure from the time-honored wheels on fixed and movable pivots, and have adopted in their stead the turn on fixed and moving pivots.

This change effects the greater part of all drill movements, and at first made them appear awkward and loose; but we have become accustomed to the new method and believe it will prove satisfactory.

There should, however, be no such subdivision of a company as a section. Although authorized by the last drill regulations, under certain conditions, no use was found for it.

In the loading and firing there are also changes caused by the adoption of the new rifle.

It is not believed that the majority of us will agree to the statement regarding rapid fire in paragraph 143, as fol-

lows: "This fire is used only when preparing for or resisting a charge." Neither will most of us consent to the fixing of bayonets and setting of sights at point blank every time that it is found advisable to use rapid fire.

It is believed that magazine fire should be allowed and prescribed even for troops not being charged, as when opportunity is presented to thus assist their neighbors several hundred yards distant.

On still other occasions the sudden effect of the most effective fire would undoubtedly be of great assistance, and wisely used.

And to wait till we arrive at the point prescribed for rapid fire and then waste time in fixing bayonets, seems to invite failure, and it is safe to say that with troops that are going to use their bayonet, the proper preparation for such work will be quietly done behind shelter some 500 yards distant from the enemy. In that same connection there will never be any command "charge bayonets" given when we have arrived within thirty yards from our enemy's position and are running at full speed.

The book should be consistent and not teach us one kind of charge bayonets for close order, precise, parade movements, and expect us to invent some other method in the supreme moment of a successful charge. However, the new book inherited from former systems these obsolete ideas about rapid fire and charge bayonets.

It is believed that great improvement has been made in the different schools of the soldier, squad, company, battalion, regiment and brigade, by the free use of the pruning knife, and by introducing more uniformity into the system.

The extended order drill has been most improved, and has been made more elastic and serviceable by the additions introduced.

But it is not understood how the single rank idea found expression, as set forth, in the school of the company, since we are forbidden to use it in any practical manner, or under conditions that are likely to exist anywhere except on the drill ground.

It was a mistake to ever use the word. It is also believed to be a mistake (paragraph 22) to form company in column of squads into line of squads with center or other squad remaining on the line of advance.

It is too hard to imagine a case where it would be any improvement on all the other methods given, and unless superior to all of them it has no proper place in the new book.

And it is believed that under all probable circumstances it will be found better to first form line of squads, each squad immediately deploying, than to attempt to "deploy as skirmishers from any formation".

If marching under conditions which might render such a movement advisable, would it not be better still to have the company moving along as skirmishers marching by the flank, with flankers, etc., as we did in the Philippines almost universally after really getting down to business methods over there? The text should authorize this method.

The school of the battalion is greatly improved, both close order and extended order movements, the close order drill being simpler and more uniform, and the extended order exercises being more elastic and natural.

The school of the regiment has been cut down to about the proper size and now contains no movements evidently useless.

But it is not believed that sufficient care has been used in framing the commands that are given by the colonel.

While he gives his commands mostly by word of mouth, he uses language which contains phrases having special meaning when used in the preceding schools, yet when used by him some of these commands seem unfinished and sometimes misleading in meaning.

For instance, he breaks the rule previously established and abundantly justified, and leaves out "battalions" when commanding "Halt".

On several occasions he gives the command 1. "To the rear," 2. "March", meaning for the squads to turn to the right (left) about, and not the movement explained in paragraph 50.

He designates the base battalion and commands: 1, "Forward," 2. "March".

It is firmly believed that there is no reasonably good excuse for thus violating rules previously established and satisfactorily tested. The text should continue to be consistent in the explanations, descriptions and commands used. It is difficult to reconcile the two descriptions of movements given in paragraphs 376 and 383.

Note that in forming "Column of masses to the right"

from column of squads, the companies incline to the right and the column of masses when completed faces to the left; while in forming "Line of masses to the right" the companies incline to the left and the line of masses when formed is faced to original right.

There is an inconsistency which will cause controversy whenever those two movements are discussed or executed.

The word "echelon" is used sometimes in the meaning given it in the drill movements, as in paragraph 396, and at other times in battle exercises, it is simply a line and perhaps exactly in rear of some other line or lines.

What is said about the handling of brigades and larger bodies seems about all that is needed.

In that part devoted to "ceremonies," the most striking changes are the substitution of "Eyes right, etc." for the "Port arms" in saluting the reviewing officer, and the various changes in "battalion parade".

At first they seem awkward and unnecessary changes, but having gotten accustomed to the new methods at ceremonies, they are undoubtedly improvements.

The additions about camping, pitching tents, etc., are excellent.

SAN JUAN, P. R., December 19, 1904.



PHYSICAL PREPAREDNESS AND THE ORGANIZED MILITIA.

BY LIEUT.-COLONEL N. S. JARVIS, NATIONAL GUARD, N. Y.,
CAPTAIN U. S. ARMY, RETIRED.



HE Constitution provides for "training the militia according to the discipline prescribed by Congress" (Art. I, Section 8). The statute is obscure to the present generation as it must have been to those responsible for its inception.

To approximate a standard of efficiency formulated for the national forces, that is, the "Regular" Army, it is evident that much must be left to the discretion of the States, where the opportunities for training its "citizen" soldiers are necessarily limited. In fact, it is impossible under the varying conditions of civil life for the military education of the two forces to move on parallel lines for several reasons, which will be touched upon in this article. Success as a soldier is based primarily upon certain physical desiderata, which must be attained, otherwise the superstructure rests upon foundations of sand. Much has been said of the paramount need of teaching the militia soldier how "to take care of himself" in the field, and without denying for a moment that a knowledge of field-sanitation and personal hygiene will do much to arrest and mitigate sickness, yet does it not seem greater wisdom to place a primary obstacle in the way of disease by increasing the soldier's resisting powers?

Pilcher, in discussing the subject of athletic training, wisely remarks: "It is singular that while the Medical Department has devoted ample attention to the prevention of diseases by the removal of threatening conditions, it has almost entirely neglected prophylaxis, by increasing the resisting powers of the soldier himself."*

Of what factors may be asked is this power of resistance made up? Simply strong muscles, an active heart and circulation or a composed and normal nervous system. Not to any one of these essentials, but in a happy union of them all, we have a well-spring of power, by which disease is thrust aside to seek frailer and more susceptible subjects.

*Proceedings of the Association of Military Surgeons, 1894.

The Physiology of Exercise.—No attempt will be made here to offer more than a superficial review of a subject replete with disputed claims, varying experiences and questionable statistics. Certain well-grounded and generally accepted facts will be presented, however, to make clear the meaning of the discussion.

Those sufficiently interested to enter more fully into the subject are referred to such writers as MacLaren, La Grange, Sargent, Sherrington, Ling, etc.

For convenience, therefore, we will study the effects of exercise on:

(1) *The Nervous System*, which is supposed to embrace (a) the cerebrospinal, presiding over intellect, voluntary motion, as a rule, and the special senses. (b) The sympathetic or organic system, controlling the functions of nutrition, involuntary muscular movements, the mechanism of circulation, etc.

Anatomically, the latter is closely connected with the former and there is a reciprocal sympathy, both in health and disease, between the two systems.

Dr. Luys* has shown that where the function of a muscle is lost, as in paralysis, degenerative changes will be found in the gray matter of the brain, from which the impulse affecting such muscle emanates. It is reasonable to assume by analogy that an increase in the nutrition and tone of the muscles will excite corresponding changes in the nerve-centers. It is also a significant fact proven by Pflüger† that the sympathy between the nervous supply of a muscle and the muscle itself is so close that a stimulus to action passing from the periphery to the nerve-center, excites a much more powerful reaction in a healthy muscle, than in one unaccustomed to contraction; in other words, a man who works obtains much more from his muscles by a moderate stimulus than one who is inactive. Again, repeated stimuli to reaction, starting from the periphery, increase the reflex function of the spinal cord so that many complex movements are performed without the aid of the brain. This "automatism," so called, probably explains the ability on the part of veteran trained soldiers to withstand the depressing effects of continued marching, which would exhaust raw troops, whose will power is constantly taxed to meet the strain.

* "The Brain."

† La Grange "The Physiology of Exercise."

La Grange* contends, moreover, that bodily work imparts to the man greater energy of will, constituted as a motor force, and from this change of a moral order, quite as much as that of a purely material, results what is popularly termed "physical courage." The most remarkable example of this development is seen in some of the lower animals, such as the strong-limbed bulldog and the type of man found in the prize-ring, whose power of resistance to fatigue and indifference to pain is accompanied by an energy of will and intensity of purpose almost beyond belief (La Grange). Therefore, a well-trained physique induces in man resisting powers and an insensibility to pain, friction and nervous wear, particularly desirable for the soldier—qualities not to be sought in those softened by prolonged repose and inaction.

The nearer a man approximates the purely organic life, which is the tendency in a luxurious civilization, the softer and less resisting he becomes. Moreover, it is claimed by some writers that comparative insensitiveness in the athlete is due partly to the fact that the sheath of the nerves participates in the general development of the muscular system, rendering them less susceptible to impulses of pain and shock. Physicians know by experience that the robust, muscular laborer will frequently ignore surgical procedures which would produce intense agony in a sedentary subject. The writer has, on several occasions, amputated fingers of laborers crushed by accidents, where the use of an anesthetic was unavailable and has observed very slight reaction to pain or shock.

Later we will see how profound are the sympathetic relations between the healthy and diseased nervous systems and the circulatory and digestive functions.

(2) *The Circulatory System*, embracing the blood, heart and blood-vessels, is primarily the dynamic force which vitalizes the tissues, at the same time carrying to the various excretory glands and the lungs the waste, the *débris* of the body, for oxidation or elimination in various changed forms. The part which the blood plays in the elimination of toxic materials is as important to life as its building function. After yielding up oxygen and other demands of the tissues, the blood takes in exchange products of waste, as carbonic acid, creatin, creatinin, hydrogen, sarcolactic acid, etc. The lungs, acting as filters or aerators, abstract from the blood its carbonic acid

* Idem

and other deleterious compounds and this process is in direct proportion to the quantity of blood entering the lungs; in other words, the more the waste from the muscles and other tissues, the more rapid the action of the lungs, or the greater the amount of lung space brought into action. Normal exercise, therefore, amplifies the respiratory movements in number and extent of lung space. Then during exercise there is an actual increase of blood passing through the heart and lungs calling for exaggerated aeration. These movements are ordinarily of a reflex nature, excited by the presence in the blood of some intoxicant, whose nature is not clear, acting upon the centers in the brain, which preside over respiration. When it accumulates more rapidly than the lungs can comfortably remove, the entire system is poisoned and the heart muscle participating in this is more or less disabled, its contractions enfeebled and finally decreased in number.

During exercise there is also an increase in the pressure of the blood column and more force is demanded on the part of the heart. Now it is only by the fall in blood-pressure, through reflex nervous action, that the strain upon the heart is lessened. While the left ventricle of the heart sustains largely the pressure of the blood column throughout the body, the right ventricle is strained through interference with the free aeration of the blood, either as a result of diminished expansion of the lungs, or other mechanical obstruction, to free flow.

It is claimed by some writers, Oliver, Branton, Tange, and Zuntz, and others, that the blood-pressure in athletes is *constantly low*, so that less demand is made on the heart to do its work, or it has less resistance to overcome. This lowering of resistance is due to reflex action, Nature kindly intervening to lessen the burden.

When the respirations become greatly accelerated, say, more than thirty, there is an actual decrease in oxidation. "Shallow" breathing, as it is called, does not permit the entrance of sufficient air to oxidize the venous blood. But an athlete, instinctively aware of this, learns to control the amplitude of breathing and voluntarily limits the number of respirations, retaining the air sufficiently long in the inflated lung as to insure oxidation of the blood. On the other hand, excitement exercises by its effects on the nervous system an accelerating action, prohibiting natural and free oxidation. These unfavorable elements the athlete overcomes by his training,

constituting the so-called "respiratory education." The necessity for such in soldiers is too apparent for argument.

During expiration there is always a greater or less crowding back of the venous blood, imperfect aeration and corresponding strain upon the right side of the heart. This may be so intense, as in the act of lifting heavy weights, in prolonged and rapid exercises, as to materially and permanently injure its muscular fibers. Albutt*, an English authority, reports interesting instances of the kind in young men and those of middle age, resulting from paper-chases, bicycling, etc.

Of such accidents we will speak more fully as they apply to the soldier.

(3) *The Muscular System.*—The intent of physical exercise is primarily to increase the tone, force, appearance, and proportions of the muscles, all changes expressing themselves secondarily on the system at large. As already explained, muscular contractions are accompanied by more or less waste, the effete substances being removed by oxidation or eliminated through the organs of excretion in changed forms. During contraction, the blood-vessels in the muscle are widely distended, permitting an increase of at least one-third more blood than during rest. This congestion, in itself, adds to the nutrition and functional activity of the muscle. We have also indicated that the more a muscle is brought into action the greater its susceptibility to impulses, accomplishing much more work with a slight impulse from the nerve-centers than the undeveloped muscle.

On the other hand, a muscle at rest is more or less poisoned by its own waste, comparable to a furnace clogged with clinkers, and by reason of deficient innervation it loses tone and undergoes atrophy. Again, it must be borne in mind that the over-stimulated muscle may also undergo atrophy.

In considering the subject of exercise, we have in view largely the voluntary muscles, although through the close connections the involuntary muscles participate in the effects of healthy contractions. The heart, though an involuntary muscle, is an example of the developing results of exercises. The physiological effect of the muscles in increasing the processes of aeration, is of particular import to the athlete, and while muscular contractions, even in the legs, stimulate breathing, the object usually sought in "training" is to develop those

*Albutt's "System of Medicine," Vol. 6.

muscles which influence the expansion of the lungs or widen the thoracic cavity. This, at least, is of prime importance to the soldier, for by so doing his "wind" capacity is magnified and the tone and contractibility of the heart improved.

Any limitation to the greatest possible breathing, as will be explained, may not only encourage disease, but eventuate in certain well-defined and sudden accidents, crippling him at a critical moment.

Muscular activity encourages the blood flow from and to the heart, thus relieving passive congestion of the veins in the trunk and extremities, while inaction favors stagnation, expressing itself in constipation, indigestion, headache and a numberless train of similar symptoms of a functional nature. These, in turn, may become permanent from the close nervous affiliation between the atonic nerve-centers and the sympathetic nerves which pass to the various viscera.

Gautier, a French physiologist, has shown that certain products of waste termed leucomains, analogous in their effects and composition to ptomaines found in dead bodies, accumulate in overworked muscles unless promptly carried off or eliminated by oxidation. These bodies are supposed to form in animals hard driven, or greatly frightened, immediately before slaughter and is the explanation given for the unwholesome character of their meat. The wisdom of allowing animals sufficient time to permit free elimination of such waste products, is therefore clear and is one of the arguments in favor of intervals of rest for the athlete or overworked soldier.

As the bodily development is really not completed until the thirtieth year of life, it is evident there is abundant opportunity for the muscles to permanently increase the lung space by suitable training. The ribs, cartilages and other portions of the bony skeleton are sufficiently elastic to expand, and the muscles of the trunk play an important part in exercise, their effects on respiration alone considered.

As space forbids, we have purposely omitted detailed reference to the effects of exercise on the skin, kidneys and the abdominal viscera, merely emphasizing the axiom, that all the tissues are subject to sympathetic improvement in nutrition and tone, which primarily influences the heart and lungs.

DISORDERS WHICH MAY ARISE FROM DEFICIENT DEVELOPMENT.

Having briefly outlined the results of reasonable exercise, we will now review the disorders which may be averted by increasing the powers of resistance.

It may be well to render the subject clearer to lay readers at least, to class these with respect to the several systems as we have formulated them, although such a classification is somewhat arbitrary, always remembering that disease affecting any organ is prone to involve the entire economy.

Heart Strain.—The heart, as other muscles, is liable to overwork and we have explained that an overworked muscle actually loses in size, tone and consistence. The explanation is complex and a subject of much dispute among physiologists. We see a marked example in the "overtrained" athlete, who loses weight and strength. "Overtraining" is exemplified also in the jockey, whose aim is not only to harden his muscles but impose as little weight as possible on the horse.

The heart, when subjected to gradual stimulation by careful and healthy exercises, will increase in size, tone and contractility. Technically speaking, it undergoes concentric hypertrophy and is capable of accomplishing more work. Certain desiderata, however, are necessary, such as normal valves, normal muscular fibers, healthy nervous supply, and intervals of rest.

To subject a heart, which has not been fortified by training, to great and sudden strain, so often the lot of the young soldier, may lead to helpless invalidism. We recall that the blood-pressure is always raised during exercise, which, in the athlete, is compensated for by a relaxation of the muscular walls of the vessels and an increased flow to the tissues at large. In the active and muscular, low pressure is the rule. Should the pressure be continued during severe exercise, the heart muscle subjected to a relatively great strain becomes distended or dilated, the fibers giving away, and without opportunity for recovery becomes permanently damaged.

There are two varieties of heart strain: (1) Simple irritable heart. (2) The permanently dilated heart.

The first type is not uncommon in young soldiers and is classically described by Surgeon-Major Myers, Coldstream Guards: *

* "Exercise," Quain's Dictionary of Medicine.

"The young soldier of light frame, with irritable, palpitating heart, who has broken down in his preliminary training. * * * When at rest he feels perfectly well and has little or no sensation of throbbing in his chest. So soon, however, as he puts on his tunic and accoutrements and begins his drill, throbbing occurs with more or less fulness, accompanied with a feeling of oppression and with difficulty of breathing, and this being followed by a sensation of faintness, sickness or dizziness, he has to fall out of the ranks."

This variety is, fortunately, the most common and is due to the combined effects of fatigue, insomnia, excitement, and the nervous state which accompany unaccustomed exposure. It is particularly apt to be found in those whose lives are more or less sedentary, such as clerks, mill operators, students, or professional men, and is encouraged by indiscretion as to diet, alcohol or tobacco. Young soldiers, therefore, complaining of the symptoms so graphically described by Myers should be promptly relieved from all duty and placed under the most favorable conditions as to rest, food, and hygienic surroundings. As we will show by statistics, unless thus promptly cared for, this class will merge into the second or more serious type.

The second variety or permanently dilated heart, is one of the most pitiful accidents which can befall the young soldier, and particularly the civilian, who must return to his usual tasks unfitted for the burden of life.

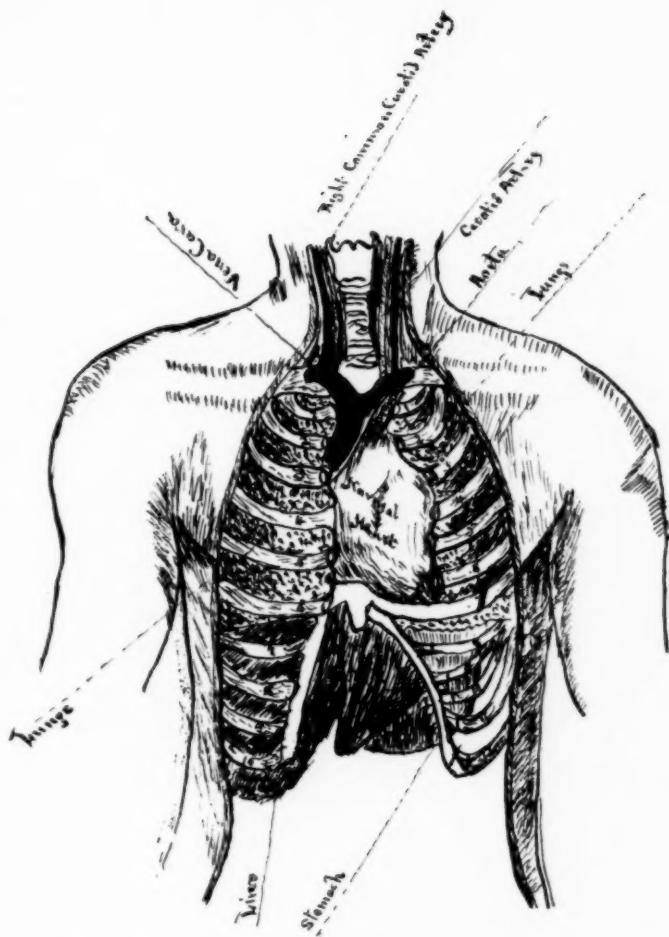
Physiologists claim that the critical period of our arterial system, when violent exercise may be followed by a yielding of the elastic coats of the arteries or the heart valves, is in the neighborhood of thirty-two years. Probably 40-50 per cent. of our militia approximate that stage of life.

Myers* thus speaks of this class: "Men who have settled down to the real business of life * * * who undertake violent exercise without preliminary training and thus throw unexpected strain on the heart and blood-vessels. * * * sow the seeds of organic heart-disease." Albutt,† a distinguished English writer, adds: "In untrained men driven by haste or peril, prolonged effort, incessant and severe strain and fatigue products come in to complicate the reckoning, and permanent harm may be done."

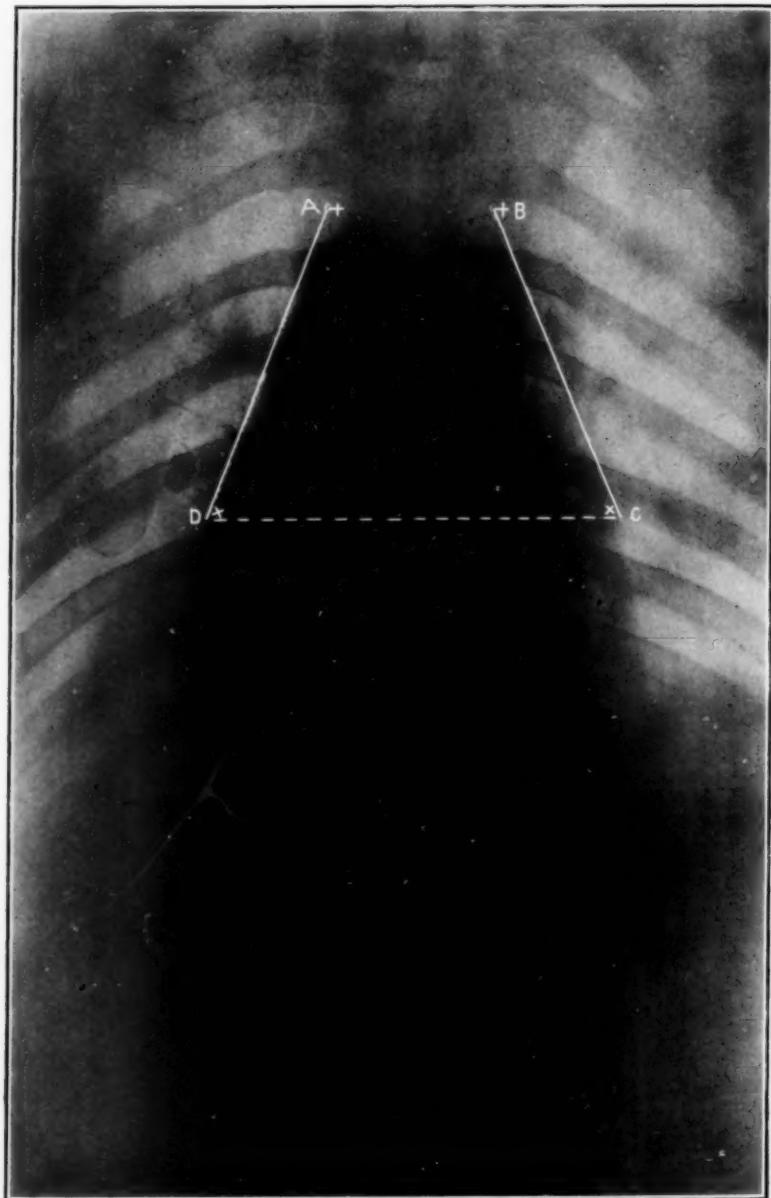
During the War of the Rebellion, Dr. DaCosta, of Philadel-

*Op. cit.

†Albutt's "System of Medicine."



Showing Normal Relations of Heart & Lungs. Modified from Gray's Anatomy



SHADDED LINES INDICATE ENLARGED HEART.
A-D—RIGHT BORDER. B-C—LEFT BORDER. C—APEX OF HEART.
SHADOW BELOW D-C LIVER. NOTE EXPANSION OF RIGHT BORDER.

phia, treated 200 soldiers suffering with heart strain, in the city hospitals. Of these, only 38 per cent. recovered sufficiently to return to duty. Most of the remainder terminated in chronic heart-disease. Surgeon M. K. Taylor, U. S. Vols., reported a large number with dilatation and thinning of the heart walls on the right side; of these, few recovered sufficiently to resume duty*. The literature of French and German writers is replete with instances of this injury among young soldiers and we will dismiss the subject with a brief mention of a case which has come under the writer's observation: Sergeant S—, Twelfth Regiment, N. G., N. Y., age thirty-two years, who, up to the time of the accident was in sound health and strength, participated in a hard march, estimated at twenty-five miles within twenty-four hours, during the fall maneuvers at Manassas. On the following morning he experienced a sense of exhaustion and faintness, necessitating relief from all duty. An examination of his heart by the regimental medical officers revealed evidences of dilatation. His face was blanched, pulse irregular and intermittent, and although improved at the present date, it is questionable whether he will ever regain his former vigor and activity.

The radiograph placed in my hands through the courtesy of Capt. S. A. Brown, Asst.-Surg., Twelfth Regiment, shows the extent of the heart enlargement, which is marked in the right ventricle. By pressure against the contiguous lung the apex is forced to the left of the normal line. For purposes of comparison, we also submit an outline of the normal heart.

It is reasonable to believe that many other militia soldiers were victims of a similar accident, and the possibility of such an occurrence among untrained troops, is a patent appeal as to the wisdom of such unexpected and exhausting efforts, as are said to have characterized the fall maneuvers.

Two other serious heart complications occurring among members of New York regiments, one of which terminated fatally, have come to the writer's knowledge, but in these instances the diseased heart was of long standing and was naturally aggravated by the strain, so that primarily the maneuvers were not responsible.

In conclusion of this interesting study, a quotation from Mauret,† of the French Army, is appropriate. Discussing the

*"Medical and Surgical History of the Rebellion."

†*Le Maladie du soldat Manut Medicina Major.*

subject of heart strain "Cœur surmene," so called, he adds: "To escape the derangement of the circulation, so common among young soldiers in the first months of the service, it is wise to submit them to methodical training, so as to prepare them gradually and slowly to a degree of muscular force and resistance to fatigue, which they must exhibit at the expiration of a certain time, to satisfy the demands of the military profession."

Rheumatism of the acute articular type is another affliction to which young soldiers, whose system is not prepared for great fatigue, are prone. According to Rousseau, Hardy, and Behier, Gubler, Peter, and others, the disease is more the result of extreme exhaustion in those unaccustomed to great exertion.* The imperfect elimination of the products of fatigue play an important part in the causation of the disease. Mau-ret† shows that the disease is particularly frequent in recruits, whose muscular system is unprepared for the strain of service.

DISEASES OF THE DIGESTIVE SYSTEM.

Can anyone question the benefits possible from carefully regulated physical exercise, in functional disturbances of the stomach and bowels or inactive liver. The physiological explanation of such benefits has been explained through the close affiliation between the voluntary muscles and the sympathetic nervous system. The fact that men show increase of weight after a brief period of guided exercise, is a fair proof of its beneficial effect upon the digestion and blood building functions.‡ On the other hand, there can be no doubt that weak men or those overtaxed by fatigue yield much more promptly to diseases of the bowels and stomach. It is claimed by many authorities that raw soldiers are much more susceptible to typhoid infection than those hardened by previous service or training,§ as a result of their tendency to exhaustion. In considering the relative number of typhoid fever victims in the volunteer and "regular" regiments, participating in the recent war with Spain, there is good evidence that the disproportion was largely in the favor of the latter. However, this disease is so uncertain in its intensity and insidiousness, that no class of men, strong or weak, can feel safe from its ravages where local conditions or food favor its spread? ■■■■■

*Du Pseudo Rheumatisme de Surmenage. *Gazette Med. de Paris*, 1885.

†Op. cit.

‡Reynolds System of Medicine Vol. II.

§Munson's Military Hygiene, p. 50.

CAN THE POWERS OF RESISTANCE BE DEVELOPED?

We now arrive at the practical end, which has prompted this discussion, and would recall our statement that the training of the "regular" forces and the organized militia can not be on identical lines. And it is here we come to the parting of the ways, if we can hope for anything approaching physical equality in the State and National forces. While physical training proper, forms small part of the system of preparing our army for service, yet the "regular" has certain advantages compared to the militia soldier, which explains his relative immunity from sickness and other disabilities of service. His careful selection, regularity of living, open-air life, abundant and well-cooked food, are factors giving him untold advantages over his comrade in the militia.

The records of the Rebellion show that 50 per cent. of the volunteers were rejected by the medical officers, and the greatest proportion was found in *such* men as constitute our militia at the present date, namely, mercantile and professional, whose ratios of rejection were 52 and 47 per cent., respectively.

Unskilled laborers gave more favorable figures, only 38 per cent. being thrown out. Of those who had former military service, but 18 per cent. were rejected.

In the event of war, therefore, can we expect our militia soldier, in spite of the best hygienic precautions, clothing and medical attention, to emerge from his badly ventilated office or mill, his laboratory or store, and meet the strain of service without shock, unless his system has been in some way fortified? No, it is an improbability that he will meet it without a reaction that usually places him *hors de combat*.

It is this type of a hastily assembled force that offers the oft quoted ratio of five deaths from sickness to one killed in battle, and we would here recall that the German forces, in the War of '70-'71, somewhat reversed the figures, the proportion being .4 to 1.*

This favorable showing has been attributed by thoughtful students to the careful physical development of the conscripts and there is no reason to doubt the explanation.

Can we hope for similar results with the militia? It is a knotty problem, requiring time, self-denial, regularity and no small amount of patience. We can do not more here than to

*Froelich *Militaire Medicin.*

indicate the general principles upon which training should be carried out.

Primum non nocere, should be the watchword and in this connection, we again quote Myers, of the Coldstream Guards,* who lays down the following principles: (1) That while exercise is necessary * * * carried to extremes it may develop organic lesions. (2) In manhood, no violent competition should be attempted which would throw great strain upon the thoracic organs, unless previously examined and pronounced sound, *nor till their full powers have been brought into play by careful preliminary training.*

Parke also adds: "As prolonged exertion often leads to secondary atrophy of muscles, the axiom is to alternate with long intervals of rest.† We must treat with two classes of men in formulating any satisfactory system: (1) The young and undeveloped man from eighteen to twenty-five years of age. (2) Those who have reached the physiological climax of growth and are approaching middle life.

Now with the first class, two objects are sought, to improve and extend the growing figure and maintain a healthy resistance to fatigue. The expansion of the lungs and thoracic cavity by such exercises as bring into action the muscles of the back and shoulders, should be the primary aim of any system of athletics, for these men. But it is a physiological axiom that exercises of speed must be associated with any system of gymnastics having this object in view, for, as La Grange claims, just in proportion as the lungs expand by forced breathing, so will the shape of the chest be influenced.‡

To meet this demand, therefore, the following are advisable: running, boxing, fencing, the single-stick exercise, the "setting up" exercise, as now practiced in the U. S. Army, wrestling and swimming.

The bayonet exercise, now unfortunately left out of the drill manual, is developing in its effects and should be adopted in conjunction with the musical calisthenics, so ingeniously described by Butts.

Such exercises of skill as fencing, boxing and bayonet drill, as practiced by the English and French infantry, are of additional advantage in that they increase the soldier's alertness

*Op. cit.

†Parke's Hygiene, p. 63.

‡La Grange. The development of the chest.

and his "muscular irritability." The latter term expresses the degree of reaction which exists between the nerve-centers and the muscles, which respond by their contractions, just in proportion as this development is increased. We may say that the fast runner has marked "muscular irritability," for his leg-muscles are extremely sensitive to voluntary impulses. Exercises of speed have the disadvantage, however, of placing the nervous system under tension if carried to extremes. For the first class of men, the exercises above mentioned should be supplemented by graded work on the horizontal and parallel bars.

With the second class of men, or those whose frames have "set," so to speak, and where we cannot hope to bring about any marked change in the physique, the objects sought are to maintain the powers of endurance and preserve the contractility of the heart and voluntary muscles. The elimination of waste and reduction of fat in this class also demands free exercise of the respiratory functions. But violent exercises and those demanding speed are not necessary for these purposes and are more apt to injure than benefit. Moderate running, fencing, boxing, swimming, the single-stick exercise and bayonet drill come within the category of work in which this class may indulge, providing always, that reasonable intervals of rest are permitted.

Practice marches in the country are of the utmost advantage to all classes of militia soldiers; not only do they develop the automatism so essential to the infantryman, but they accustom the men to their equipments and teach many details pertaining to the adjustment of weights. This is a feature of training upon which much stress is laid in the European armies. It is a common occurrence in the French Army to see the men appear at the daily routine drills with blanket-roll or knapsack on the back.

Armory drills are of limited value for the militia and are a slight test, either of intelligence or military fitness.

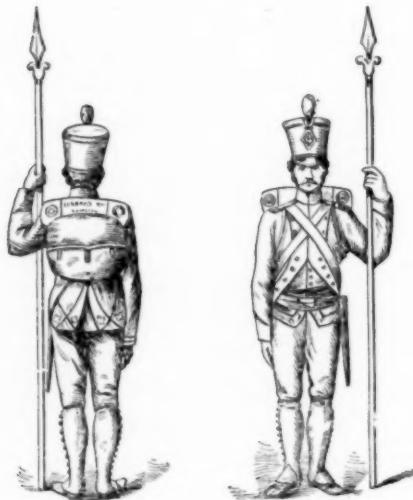
It is the writer's opinion that if the idea of physical training under competent and wise supervision be adopted in the organized militia, a young soldier will feel in later life that he has been more than repaid for his enthusiasm and time expended; in return, he will have to his credit a well set up and manly physique, a fund of health and a love for beneficent exercise which is not ordinarily obtainable in civil life. To the author-

ties, on the other hand, the reward will be a physically competent, alert and presentable body of men, who may be expected to meet the demands of service, with far less disastrous results than on former occasions in the history of the Republic.

In conclusion, we desire to have it understood that physical training, as we have attempted to advise, is no endorsement of the armory contests, as the writer has witnessed them. Such trials of speed or strength more often subject the contestants to a strain which not infrequently does grave harm and unfit them for military service, and it must be further remembered that such contests are an encouragement to specialism in athletics, rather than a wise use of the principles of general development. The scorching bicyclist, for instance, is a particularly fit subject for rejection by recruiting officers, and in our opinion, sows the seed for serious heart lesions and defective breathing powers.

May we not hope that our "citizen soldier" may some day attain the ideal so well expressed by the immortal Cowper:

"He stands erect; his slouch becomes a walk,
He steps right onward, martial in his air,
His form and movement."



A STATEMENT OF THE PRESENT NEEDS OF THE COAST ARTILLERY.

BY LIEUTENANT GEORGE M. BROOKE, ARTILLERY CORPS.

IN the following article the writer has avoided studied analysis and the discussion of details as much as possible, and has merely tried to state what he considers to be questions of theoretical fact.

It is generally acknowledged by persons familiar with the coast artillery that changes in that arm are needed. Reports now and then indicate that the number of men and officers is not adequate for the manning of fortifications already completed. This, of course, is due to the failure of Congress to allow for an increase of the artillery, and such deficiency has been thoroughly discussed in official reports of general officers and of others competent to know. It is not my purpose to dwell on the incongruities of supplying a complete matériel and yet neglecting to grant the personnel necessary to the development of its tactical efficiency. But as it is generally agreed that there are other serious needs of that personnel aside from increased numbers, it is my purpose to make certain suggestions concerning its organization. It is also supposed that my readers are familiar with the present conditions in the coast artillery service, and of those co-existent with the past few decades.

The Coast Artillery of our day is a distinct and highly technical arm, requiring a higher technical training and education than is necessary for the rest of the line; and that training is not in itself purely military. Not only is more advanced education and training required, but the coast artillery service needs inducements in order to create spirit and to make men stick to it.

Provisions for instruction have been and are being made, but in the present state of the arm, as well as for some time past, the curriculum of studies is not, and has not been for any period of time, definitely fixed. This is so, notwithstanding the efforts made to determine and establish one for officers. Too many persons have the selection of text-books for the instruc-

tion of the enlisted personnel. There is never definiteness enough. For the men, the captain, or perhaps the lieutenant, who happens to command the company, practically makes his own course. The service requires committees of a permanently established general board to compile books of pure technics suitable to our coast artillery needs, and such books when compiled should be mastered by the mass of the enlisted personnel under orders of the War Department as a boy masters his school books or a soldier his drill. Their study should be a part of drill, as important as drill, the foundation of drill.

For the sake of uniformity and thoroughness, a definite standard of instruction and proficiency needs to be laid down for the whole coast artillery. Companies have need of being brought more nearly to a generally accepted standard of proficiency than they now are. Too much is left to the personal equation of captains. A definite standard of excellence, it would appear, should be laid down and prescribed, governing a definitely established course for different grades of the enlisted personnel, beyond the limits of which course no man would be required to advance, yet to which limits he must advance, and beyond which he should be afforded every opportunity for thorough and more advanced instruction should he so desire.

The army ought not to be equivalent to a collection of private schools, and the company commander allowed to follow his own theory and course like a private teacher. If the army is to be compared to a school system at all, it should be to a great autocratic, public school system, controlled by one head in all matters relating to the established standard. When this standard of proficiency had been attained by any individual, the resemblance to methods of private instruction would be allowable in his later education.

I do not advocate decreasing the individuality of either junior officers or enlisted men; but there is ample room for individuality without destroying the cohesion of large commands, the most important of which is the fort, or of the coast artillery in general, by a latitude which is in reality the absence of a sufficiently strong guiding, controlling and co-ordinating power. Such a power can cause coherence by standardization and can at the same time produce *esprit* and *élan* by a readiness to praise and encourage originality and individuality where shown in advancing the interests of the service in general be-

yond fixed requirements. Republican principles cannot be well taken as military principles except in special cases, of which cases the system of military instruction can certainly never be one. This is true, although republican principles may, when applicable to the requirements of special cases or times, impart an individuality and enthusiasm, the results of which are no less than grand. In the days of smooth-bores there was definiteness. There is no reason why definitity, standard and system should not keep pace with progress, even though that progress be more rapid to-day than yesterday. We need system, standard and definity of method in order to give the men a settled mind and something by which to gauge their own individual efficiency. The government is then likewise afforded the same opportunity.

There are captains who zealously strive to carry out the orders of the War Department relative to the instruction of enlisted men, but who are discouraged by the lack of books, which are often adequate neither in numbers nor in character for even that course which has been so far outlined or prescribed. This economy of books is a false economy. We can only acquaint Congress with the facts by continued repetition. Let the coast artillery have a solid school system applicable to enlisted men, as well as to officers, or let it have none at all. It is acknowledged, in general, that the army needs schools; then let the coast artillery in particular have good school methods and solid, thorough, definite instruction; not pseudo-schools and pseudo-instruction and general theoretical smattering and dilettanteism.

There is a very wide breach between the knowledge of officers and the knowledge of enlisted men. The younger officers usually have theory, but little practical knowledge. The older and better non-commissioned officers, as a rule, have thorough practical knowledge, but are possessed of only crude theory. The younger officers more often do the teaching. They cannot always impart what the men need, or at least cannot impart it in that manner most suitable to the thorough instruction of the men. It seems then, that all junior officers should be required as soon after assignment to the coast artillery as practicable, to qualify as practical gunners. To this end a thoroughly practical gunners' school, composed of only junior officers, and for the instruction only of officers, should be established in every post, and should remain open constantly during all seasons of

the year. All young officers should be made to get out and do the practical work. Theory is absolutely necessary for officers, but to give them the necessary standing with the men, practical ability and training are as necessary as thorough theoretical knowledge. This is equally applicable to officers from whatever source they may come. The alert and highly trained graduate of West Point would find it only a question of a short time before he was able to qualify as a thoroughly practical gunner. Here it may be remarked that as long as instruments are so valuable or scarce, that men and officers can either not practice with them, because they are too few, or because of the fear that they will be broken, good results in practical instruction will never be obtained. There is always talk of using the transit and various other instruments, but few men ever do use them, or else a group of men stand gaping around while some officer, or non-commissioned officer, mysteriously talks in big names. And the men naturally imagine that the use is as hard and mysterious as the name. Many men in the lower ranks of the engineering profession are trusted with instruments, and become expert even to the making of adjustments, but how many, even of our officers are so skilled? They fool around perhaps for a day or two in a year, and get the "idea" again—and then they quit. In books and instruments we are too stingy. We attempt too much. We qualify rather than teach. If the man or officer has the knowledge beforehand, all right. If not, he never knows, unless he teaches himself, but he often still remains in the service, nevertheless.

As it is now, many officers are afraid to try to acquire this practical training, before the men, for fear of failure; some never acquire it as they should. A practical school of gunners' instruction for junior officers, and examination before such board as might be deemed suitable, would obviate much that now is. This is equally applicable to the field artillery service, where a junior officer should not only be required as a practical gunner, but should be made also to qualify as a driver. Too much is supposed and left to the initiative of individuals, or is presupposed to have been acquired. Sight is lost of the practical impossibility of an officer's learning these things where his perhaps clumsy efforts are more often exposed to the criticism of enlisted men free to observe. By failure or by awkwardness, he is lowered in their estimation however worthy may have been his efforts. No insignia or badges should be worn by

officers to indicate qualification as gunners, for all officers should be expected and required to be gunners, though perhaps not to qualify as skilled, direct gun-pointers, for which there should be a separate grade of the enlisted personnel.

Furthermore, the coast artillery needs a corps of non-commissioned officers resembling the corps of warrant officers of the navy to fill the gulf of difference in knowledge between the two bodies of the personnel. The men of the coast artillery all become discouraged, because there is no definitely established standard of excellence. All is still too vague, too theoretical, too lacking in thoroughness to appeal to the man of action, though much is attractive, if not thorough and satisfactory, to the man of books, whether he be officer or enlisted man. What the coast artillery now needs is the strong co-ordinating power of a higher and central will and intelligence. That will and intelligence must of necessity be superior to that of any one mind, however able; yet it must be guided by one will residing in an individual reenforced by a purely scientific bureau which supplements his brain in detail. A board is merely the embryo of the organized power of a scientific bureau upon whose central head and subheads depend committees or boards of specially trained men, supplementing the bureau for the solution and development of special problems; and the chief of artillery is but the embryo of the chief of a coast artillery bureau. Until such a bureau is established, and a separation made between the coast and field artillery, we can never expect to have a thoroughly efficient coast artillery. Modern requirements of technique render these changes urgent.

It would be well to make a division of coast artillery privates into recruits and second and first-class privates. Every enlisted man should be officially a recruit for his whole first enlistment. As matters now stand, there are sometimes first sergeants who are only in their first enlistment; such men can rarely be efficient from the disciplinary standpoint, or from the standpoint of the tone and dignity of the service. Many of the best men of the coast artillery go on discharge to infantry and cavalry. There should be some way to hold them. A cavalryman or infantryman rarely, however, comes to the artillery of his own will. The corps of engineers, the signal corps and the hospital corps have first and second class privates; the coast artillery is due the same.

The non-commissioned officer should not wear a gunner's

badge or chevron, nor should he draw additional gunner's pay, for the reason that his rank should carry this qualification in itself; and that rank should also carry higher pay than that of the highest gunner. In the first enlistment all men should be recruits, however capable; in all succeeding enlistments, however long a time might elapse until re-enlistment, they should be enlisted as soldiers of the private's grade held by them at date of last discharge. With the exception of lances, non-commissioned officers should never be returned to the grade of private, but should be dismissed, discharged without honor or dishonorably discharged, as the facts of the case warranted.

Besides this, we need some sort of a mental examination to qualify men for enlistment in the coast artillery, requiring somewhat more knowledge than that regarded as necessary for the mass of the line. Again I believe that the theory of excluding men under twenty-one years of age from enlistment is a false theory. Whatever the doctors may say, it is the general experience of the service, military and naval, old and new, that men who have entered the service as boys make the best soldiers. I do not mean to say that boys are the best material for enduring the hardships and temptations of service. This they certainly are not; but there can be created means of getting rid of those who do not stand the moral and physical test, and the enlistment qualifications can be more rigidly maintained in order to exclude the unfit. Besides this, such material rapidly seasons with age and service, and becomes, as before said, much more efficient in the end than that enlisted older. Young material is pliable, willing, imbibes discipline readily, has spirit and enthusiasm and looks forward brightly to life. These qualifications are at the same time its strength and its weakness, because its susceptibility opens it alike to good and bad influences. Some captains take a personal interest in their men as individuals; others do not. Those who do, of course, get better results from young material. Men who enter service over twenty-one, are more than apt to have failed in civil life. By taking men young we get more applications and better pick. It may annoy the department to receive letters from the parents of boys, but the more boys, the better service when they have become men. I would even advocate the enlistment of boys at seventeen, as musicians, provided that they came up well to requirements. Such has been at times the custom of the old service. It is not necessary that a man

should drop the designation of recruit in his first enlistment. It is not well that he should do so. He should learn that it takes time to become a soldier whoever he may be. He should learn to respect old soldiers. They would more respect themselves were they separated from him officially by one enlistment. He would the more respect his non-commissioned officers were they the pick of the old soldiers. One bane of our service in general is the too great intimacy between recruits, old soldiers and non-commissioned officers. We cannot trust in mere formalities of rank. There must be actual differences, or rank is only a sham. It is necessary to train the old soldiers and the non-commissioned officers, as well as to put a difference of one enlistment between them and the recruit, so that they can set him an example. With actual superiority of training, and with permanency of rank in the case of non-commissioned officers, rank will mean something. The dignity of rank cannot be maintained by title alone. Service, experience, training, education, ability and age, as well as adequate natural dignity and privileges are necessary to support rank. It is for these reasons that our non-commissioned officers are so little respected in general. That is why the men call the sergeant, or even the first sergeant by his first name, or by a nickname, before other non-commissioned officers, or even before his own face; while if any but a very dignified old soldier insists on being called by his title, he is usually thought a very poor fellow and quite often a fool. Proper discipline and esprit cannot well be expected with such a system. It would be well to increase the number of years' service requisite for eligibility for commission to the fourth year of continuous service, thus barring all recruits.

The whole army needs more pay. The recruits should have as much as the private of other arms now has, who has no continuous service. The second-class private should have more; the first-class private more than he, the gunners of different grades pay in proportion to their qualifications. The lowest non-commissioned officer, except the lance, should receive more than the highest gunner. This increase of pay is necessary to secure better men. No military man can deny that it is necessary when better educated men are desired. Pay will always be a large factor under a system of voluntary enlistments such as ours.

Coast artillery men of excellent character should be sent on

discharge, should they so request, to any other artillery post within reason. This is often allowed men of excellent character on application to the military secretary, but it should not be a matter of favor, but should be constituted by law a matter of right. The preference of desirable and distant stations should be given to men of special attributes of character, such to be noted on the discharge under the head of character or abilities. This would put a premium on good, efficient and faithful service. The man's special abilities and general efficiency, as well as character, should be noted thereon in special as well as general terms.

Furthermore, the coast artillery needs separation from the field artillery. It is unnecessary to dwell on a fact so well known as that the artillery organization is still anomalous, notwithstanding the fact that the tactical incongruity of the composite coast and field artillery regiments has passed away. The tactical functions separating field from coast artillery are perhaps as wide as those separating infantry from field artillery. They are similar only in so far as field guns and coast guns are cannon. The theory of their tactical employment is so widely different that it can hardly be put in the same category.

The coast artillery needs a chief, not less than a major-general, who should command the whole of the coast artillery, as the general of a territorial division commands that division. His duties would be also necessarily bureaucratic, because of the demands of modern technique. Surely the coast artillery might have at least one major-general. I do not mean to say that he should necessarily take rank in the arm, for while it is customary for officers who are chiefs of bureau to take rank in the department at whose head they are, and while the artillery is now called a corps, and while the whole coast artillery should have a bureau to direct its affairs, we should not lose sight of the fact that the coast artillery is a tactical arm charged with operations in a definite tactical sphere—the defense of a sea coast; that it is an arm and not a staff corps; that the bureau is necessitated in order to secure the proper development of technique, but that it is but supplementary to the tactical functions of the arm. This great command should be subdivided into divisions, much larger than the present coast artillery districts, the functions of whose commanding generals would not be merely territorially administrative, but due to the inseparability of men from material, and to the immovability of the latter would be

also tactical in character. Thus the territorial and tactical divisions would be rendered coincident. The able artillery officer selected to command the coast defenses and to supervise the progress of the technique of the coast artillery, might be simply a general officer on general service assigned to command the coast defenses in the manner that any other general is assigned to the command of a territorial division, at the same time, taking up the direction of the coast artillery bureau. The officers of artillery either remain colonels or retire as brigadier-generals, while officers promoted to general rank from the infantry and cavalry continue to advance more often to the rank of major-general. There is a reason for this, for the coast artillery officer is hardly so fitted to command a mixed division or a brigade of field troops as the infantry or cavalry officer, unless he happens to be a man of special and original abilities. His training and experience is special as apart from that required for service with field troops, and except during the usually short term of service with field artillery, he gains no practical knowledge of the tactical employment of even small bodies of troops in the field. But with an arm so great in numbers as the coast artillery, leaving aside the question of equality of opportunity for promotion to general rank of officers of the several arms, efficiency demands the creation of a high territorial command of the coast artillery defenses separable in the functions of its commanding general from the bureaucratic functions of those men who are charged with the progress and development of the technique of the arm; though by no means calling by necessity for the separation in person of the members of the personnel charged respectively with the general command or with the direction of the technique for the whole coast artillery. Such functions or primal command could and should be vested in the same man. The development of the coast artillery needs then to be carried on by a coast artillery bureau whose head ex-officio should be the general commanding the coast defenses. His official headquarters might or might not be in Washington, but to avoid so far as practicable, bureaucratic tendencies of a merely official character, it would seem that he should preferably reside in some principal fortress area, in order also that he might be in position to know the needs of the line of his own command through personal observation and contact. This might not be regarded as practicable for a man whose functions were bureaucratic, but it is reason-

able that the bureau being principally scientific in nature, might follow him, and be established at such place as his headquarters were. These considerations it would seem more necessary to entertain than the usual demands of centralization, which ordinarily would require both his own presence and that of the bureau of which he was the head, at the capital. A wide discretion as to the situation of his headquarters would seem more conducive to large results. His principal duty would be personally and at his own discretion, conforming to no bureaucratic rule, directly to supervise the land defenses of the coast line, and the personnel and material appurtenant thereto; and as head of a scientific bureau, to control the systemization, standardization and development of the technique of the coast artillery. The coast artillery should and does know its own business for the reason that it is its own special study, and the Board of Ordnance and Fortification would still exist independent of a coast artillery bureau, and for the purpose of settling very wide questions not within the range of the engineer, ordnance or coast artillery bureaus, and in special relation to questions depending on congressional legislation or appropriation.

Such a position of a general commanding coast artillery would involve a staff consisting primarily of a chief engineer and chief ordnance officer. The duties of the Engineers' Department, of the Ordnance Department and of the Coast Artillery conflict on the border line because they are equivalent to three separate bureaus. The Board of Ordnance and Fortification can suggest, but it cannot command, and the Coast Artillery, even though the whole artillery has been granted a chief, has not risen officially to the dignity of a distinct technical arm, demanding a separate bureaucratic, as well as commanding head. It should not only occupy a separate tactical position and be a separate tactical command, but its technical position should be dignified and extended by the creation of a bureau on an equal footing with those of the engineers and ordnance.

Thus if the coast defenses entire were a command as any territorial division is a command—the command of the littoral being in no way under the command or influence of any territorial commander of field troops, in time of war all other arms serving within the limits of or adjunct to the coast artillery defenses being under the commander of such coast artillery

defenses; and if this general command were subdivided into territorial divisions under major-generals or brigadier-generals on the general list, or promoted to rank in the artillery, if Congress so pleased, or to be colonels, if generals were not authorized, such divisions being known as the North and South Atlantic, Gulf or Pacific, coast defense, coast or marine artillery divisions, or by such other names as might be deemed suitable, and if each general commanding a division, as well as the general commanding all the defenses had on his staff a chief engineer of the Corps of Engineers, and a chief ordnance officer of the Ordnance Department, whose valuable and special services might be supplemented by junior officers of these corps, or by artillery officers of proper acquirements detailed for such duty, all accessories, as the necessary staff of draughtsmen, civilian engineers and employees, or specially detailed members of corps or arms involved, being furnished; and if general design of fortifications so far as mere structural questions were concerned, and engineering theory of construction alone originated in the office of the chief of engineers; if in the same manner the Ordnance Department confined itself under the Chief of Ordnance to ordnance fabrication and design, while execution, disposition, tactical considerations, and modifications of construction were considered and controlled by engineers and ordnance officers on the respective staffs and under the personal direction of generals commanding coast defense divisions, and were co-ordinated, limited and controlled by these generals, under the general supervision of a general commanding all the defenses, we would have co-ordination and harmony, or at least the power of systematically and definitely settling disputes caused by differences of training and of ideals, and less in scope and questions considered by the Board of Ordnance and Fortification, and more in consonance with the needs of the Coast Artillery Service.

An allowance of more officers as a surplus for boards and for the performance of duties connected with a coast artillery bureau would, of course, be necessary for the fullest efficiency, for undue economies along such lines are the most hurtful to efficiency of all economies.

Thus a coast artillery bureau constituted of a number of highly trained officers, divided into subbureaus to which were attached boards appointed for the consideration of special questions, permanently supplementing the working force of the

bureau until such questions were solved; such subbureaus with their supplementary boards considering such subjects as drill, systematic instruction of enlisted personnel, development and systematic adoption of mechanical accessories as instruments, graphic tables, etc., and questions of systematic control and of development of technique in general, it is believed that greater progress could be made at the same time that every man of the commissioned and enlisted personnel knew better what he had to know. This bureau, which should be preserved scientific as distinct from merely official or administrative, would be the brain or a vast supplement to the brain of a general commanding coast defenses—the brain of the coast artillery; and the commanding general under Congress and the secretary, guided broadly by official suggestions of the Board of Ordnance and Fortification, would be the will of that brain. The coast artillery is a tactical command. It is also a scientific bureaucratic command, but the latter is as aforesaid but an adjunct to the former. Neither of these functions should be developed while the other is neglected. If we develop technique while we neglect the administrative and tactical functions, we fail. In the same manner we fail if we create a great command with a special co-ordinating and consolidating administration and neglect technical development.

It is believed further that the coast artillery should be organized to correspond to its tactical functions. These functions are more nearly analogous to those of the navy than to those of an army in the field, which latter is organized to handle armament free to move within very wide limits and capable of mobility almost as great as that of unarmed forces, while the units of armament of the coast artillery are for all practical purposes definitely and absolutely fixed. The units of armament of coast fortifications being variable, so should be the detachments serving them. The organization of the personnel should conform to the tactical *rationale*, the ends of which demand variable units of armament. The fort personnel in such an organization corresponds to the personnel of the ship's company, the fire command to that of the squadron, and the district, as we know it, to a division of the fleet, except that in the coast artillery we have only to consider tactical conditions as they would be considered by a naval force permanently at anchor.

The ship's company is organized by her executive officer,

under her captain's orders, into elastic units which conform to the requirements of an armament permanently fixed. It would be more rational to organize the personnel of a fort also in that manner, and to assign the men and officers to their duties under the usual manning table in the same manner that the personnel of the ship's company is assigned by station bills afloat.

Such action would naturally involve the exercise of ingenuity on the part of chiefs of bureau in the War Department and of their clerks, in order to devise new forms for reports and returns, and it would also perhaps demand a different method in the assignment of recruits to coast artillery commands from the one now in force. A new method might be found necessary in order to keep organizations as nearly as possible on an equitable and permanent level of efficiency, to which a degree of permanency of personnel is necessary. It might hardly be expected to man and remain a fort in the same manner as a ship going in and out of commission. It would perhaps be a perplexing problem, so far at least as details are concerned, administratively to handle such fort commands in the manner that ships' companies are handled, and yet it would perhaps be difficult to secure the unity obtainable in a ship's company without a similar system, for the unity of ships' companies is assured by the fact that officers and men are associated together for definite limits of time determined by the length of cruises. The present artillery company by designation, and the ship itself, both remain to give *eclat* to future personnel, and the question arises whether the fort could have this influence. It is certain that it could under a wise system of assignment of the personnel, both officers and men. Since administrative and tactical units should, as far as may be possible, always coincide, difficulties will arise in preserving such units in quarters, but this is a mere question of detail which can readily be solved by application. The personnel of all the divisions of a fort command so created should so far as possible remain permanent, and changes should be made only to suit requirements of armament or emergency cases, and in special cases to suit the wishes of men of excellent character who might wish to transfer for personal reasons from one division to another with the permission of the fort commander.

The commanding officer, once his command was established, would requisition such additional number of men as was necessary to meet emergency or to man new armament, within

the limit allowed, thus affording the maximum of elasticity of personnel. The men would be requisitioned to fill the fort's manning table for gun's crews, instrument details, draughting-room details, and the like. The fort would then be organized into guns' crews, instrument, engine-room, and draughting-room details, etc., and these incorporated into divisions of personnel for the service of batteries and groups of batteries with their accessories. It is probable that with such an organization it would be necessary to put all raw artillerymen at special rendezvous directly under the orders of the commanding general of the coast artillery defenses, or to charge him with the entire machinery of recruiting for his arm. The term *Commanding General Coast Artillery Defenses* is used in preference to the term "Chief of Coast Artillery," because while such a general would be the chief of a scientific bureau such bureau would be merely the directing brain of the coast artillery, whose primal function is tactical. Such a statement seems to be a mere plagiarism, but names have far reaching influence.

Furthermore, it may be said that gunners need to stand a very practical test rather than theoretical. An examination of like character to that of field artillery gunners would be quite satisfactory. With the coast artillery, however, a certain amount of theory for a gunner is essential, more essential than for the field artillery gunner, but the coast artillery ever since the introduction of new guns and new material, has played with theory, so to speak. System, standard and definiteness are nowhere in the service more greatly needed than here. There should be a class of direct gun pointers in addition to the classes of gunners, to be composed of men who prove themselves expert at direct, subcaliber practice. The most skilled in this practice having been given their chance at the rapid-fire guns before a board, should be qualified as *direct gun pointers*—a special class distinguished by a special badge or chevron. They need no theoretical knowledge, but being eminently practical would be found a most valuable accessory to the personnel. Two dollars a month is a paltry sum to give a man qualified as a gunner. A fight had to be made to get that. Congress has so many things to do that constant repetition is necessarily required to secure most necessary ends; this again is a question where economy when too carefully considered results in deep-rooted and extended injury to the powers of national defense, which depend so greatly upon the efficiency of knowledge and

the spirit of the personnel involved. A man qualified as a mere direct gun pointer should have at least two dollars per month in addition to his pay. A gunner of the lowest grade above him should receive about five, the first-class gunner ten and the master gunner, as recommended by the chief of artillery, fifteen dollars in addition to their regular monthly pay. The number of gunners might well be limited to a certain per centum of the personnel, and examinations be made competitive, but so far competitive alone, as the *application* of knowledge and of principles was concerned. This it is believed would give dignity to the position of gunner, and at the same time would forward the interests of economy in a manner not hurtful to the interests of the service. In theory, only, a standard of proficiency is required below which no man can qualify as gunner but which would not prevent his competing for direct gun pointer, but above which a certain number of successful, practical competitors should qualify as gunners.

We may briefly also consider the question of uniform. The man in brown fatigue—the uniform which is most commonly worn in coast artillery forts, looks and feels like a laborer. A detail to clean and oil guns and carriages made by roster instead of the performance of this work by the whole command preceding or succeeding drill—which latter was at one time the custom—equally well with the latter method, accustoms the men to such duties while at the same time it saves much clothing and offers an encouragement to neatness, which is a most essential part of self-respect. This system of special detail being in force, the men may be clothed in a practical, agreeable and distinctive uniform of any desirable color. The coast artilleryman needs a loose, airy uniform, which will not impede his movements, and which will at the same time be both neat and comfortable.

Further, with the fort organization conforming to that of the ship's company, a new corps of non-commissioned officers is needed and can be obtained through a system of recommendation, and by a system of examinations before competent boards. Disciplinary requirements would seem to demand that these examinations be equal practically to that of the highest gunner in professional theory. For the highest grade of non-commissioned officer of the line, that is, for the grade of non-commissioned officer suited to the position of gun commander, examinations should contain, in addition to professional re-

quirements, some general educational qualifications approaching to those required for a lieutenant on promotion from the ranks or from civil life. For the lower grades, passing of the highest gunners' examination and the demonstration by examination, reenforced by recommendation, of ability to command, should be required. Mere ability to command must in these days be supplemented by mental attainments. The standard of intelligence of the whole coast artillery should therefore be raised. That being done, we would more rarely have the anomaly of an excellent ability for command, superceded by more intelligence united with ability for command in a very mediocre degree. Men should be rigidly excluded from the position of non-commissioned officer who have not both intelligence and ability to command above the average. The necessary placing of intelligence first often brings a man of weak will but superior education into position of command over those far more fitted practically to command than he. Discontent, uncertainty and distrust is often produced in the ranks thereby, resulting in a laxity of discipline.

With a permanent corps of warrant officers, picked divisions might be made up of men having longer terms of service. This would create the emulation necessary for disciplinary purposes between recruits and old soldiers, and which the service so sadly needs in all its branches at the present day. A citation of these views may appear to be a reversion to principles in practice in the armies of an earlier day. It may be answered that while we have made many admirable reforms in the service within recent years, an idea more or less hurtful to the true spirit of command and of discipline has grown up—partly due to these changes and partly to the slow absorption of green material incident to recent expansion—which may be checked and controlled by a reversion to old principles, the abolition of some of which has not worked good, and by the introduction of new ones based on sound theory and pillared by the experience of the past.

To have qualified gunners greater in proficiency and knowledge than non-commissioned officers is an anomaly. Adhering to the view of a body of non-commissioned officers similar to that of the naval corps of warrant officers, the members of this body would be held permanently in grade, eligible to promotion to higher grades under the orders of the Secretary of War or the general commanding the coast artillery, and warranted

by one or the other of these officials. This body would better ease the gulf of rank and knowledge existing now between the commissioned officers and the mass of the enlisted personnel than does the present body of non-commissioned officers. Officers who desire to hold to the present system of promotion of non-commissioned officers, state that the non-commissioned officers so appointed are a greater aid to carrying out the views of the captain. Undoubtedly they are, and often they are but the reflection of his character, for good or bad, according as his views of matters may vary with his character, and often they deceive him. Therefore, if the captain is inefficient, unless he happens to be able to select a good first sergeant, the personnel of his company is ruined. Thus the standard of efficiency of companies is more variable than it is necessary for it to be. But this does not need consideration in connection with the organization of the personnel herein generally referred to. Those who believe in the present non-commissioned officers' system, would probably desire to make the fort commander the officer to confer the warrant on the non-commissioned officer. It would seem, however, that for the Secretary of War to confer a special warrant on men qualified as a gun-commander on recommendation by a competent board, would be a better plan; while for the lower grade of non-commissioned officers a warrant of the general commanding the coast artillery defenses would be sufficient, and for the lance, appointment by the fort commander of a certain per centum of his command to such a rank during good behavior, would be all that was necessary. Under the present system, long honored by time, a non-commissioned officer on discharge reenlists often as a private for some other branch of the service, or for the artillery stationed at some other post. He thus loses esprit and the spirit of command, and his ambition as well as his incentive to study, except perhaps in so far as he desires to impress himself favorably on his new captain in order to obtain appointment in his new company when a vacancy occurs. He thinks to please the captain, not of upholding the dignity of the service. Such personal fidelity is most essential and should be unlimited were the captain a semi-dependent feudal lord, commanding a band of personal followers; but under a republican government there is but one absolute lord—that is the might of the people, personified in the nation, the administration or in the service which they create. Therefore, under our system of government, the

man's allegiance is to the service created and sustained by the nation. This is generally recognized, but not to the extent which it should be in the body of our non-commissioned officers. Few of these men, other than the oldest and most tried, who have grown veterans during service in one company or regiment (and companies and regiments are not the organizations which tactical considerations demand for the coast artillery) attach sufficient dignity to their position and their rank, and only to such men is dignity attached by the mass of the enlisted personnel. A man once a non-commissioned officer, then a private, and so on backward and forward must deteriorate, or he can at least never rise above a certain comparatively low level, except in certain rare cases of very strong personality or specially favorable conditions. He will inevitably lose the backbone, the habit and the spirit of command. Dignity of position, actual superiority determined by selection and established and developed by steady tenure are essential to efficiency. The material is always with us, or can readily be obtained for the service by an effort to raise esprit, and then all that is necessary is steadily and progressively to train this material and hold it in grade, eligible to promotion for the general good of the coast artillery service at large.

Who in the army would not be discouraged by the loss of trained non-commissioned officers, which loss as aforesaid, frequently occurs by their leaving the old company on discharge and going back to the grade of private in some other outfit, even being designated as *recruit* at the recruiting station, and in orders issued from that station. This is absurd. Even a private on discharge, wherever enlisted, no matter how long out, should be reenlisted as a private in the grade in which he was serving when last discharged. Little things, and names have far-reaching effects.

Much undoubtedly can be done for the good of the personnel of the artillery without materially increasing its numbers, though this is important. First and finally, let the coast artillery be made distinct in name as well as in fact from the field artillery, allowing the latter to gravitate to its regiments of battalions which tactical conditions of the field require.

THE SURPRISE OF THE TABOR BRIDGE AT VIENNA
BY PRINCE MURAT AND MARSHAL LANNES.
NOVEMBER 13, 1805.

BY FREDERIC LOUIS HUIDEKOPER.

(From the original documents in the Ministère de la Guerre in Paris and the Kriegs-Archivs in Vienna.)*



HE Treaty of Amiens (March 25, 1802), far from benefitting English trade, proved a mere delusion, since Bonaparte, the First Consul, refused to renew the Treaty of Commerce of 1798, and imposed a high tariff to protect French industries; this measure practically closed the ports of France and her dependencies, Holland and Italy, to English goods, and the British manufacturers soon came to desire war which would at least be less prejudicial to their interests than this peace which was working their ruin. In the autumn of 1802, when Great Britain complained that the neutrality of Switzerland had been violated by the troops under General Ney, the First Consul took advantage of this opportunity to dictate to his Minister of Foreign Affairs instructions for the guidance of Otto, the French ambassador at the Court of St. James,

*In the spring of 1897, the writer, who had taken his degree at Harvard and was then an undergraduate at Christ Church, Oxford, was trying to find for the late John Codman Ropes, the author of the "Campaign of Waterloo," some material in the archives of the Ministère de la Guerre in Paris relating to the last charge of the Imperial Guard at Waterloo. While engaged in this work the writer had the pleasure of meeting Prof. William M. Sloane, the author of the well-known "Life of Napoleon Bonaparte," who was also working in the French War Office. At a dinner at his apartments in the Place Victor Hugo, on the evening of Tuesday, April 13, 1897, Professor Sloane called the writer's attention to the fact that there existed in the archives of the French, Austrian and Russian War Offices, an enormous amount of unpublished material relating to the campaign of Austerlitz, and that no authoritative history dealing solely with that one campaign had ever been written. Agreeably to his suggestion, the writer, although still an undergraduate at Christ Church, applied for, and was fortunate enough to obtain, permission to search the war archives at Paris, Vienna and St. Petersburg—a permission which had never been granted to more than two other Americans.

On Monday, October 11, 1897, the writer began his work in the Ministère de la Guerre in Paris, which was not terminated until nearly five months later. He then proceeded to Vienna where he spent several weeks in the Kriegs-Archivs and supplemented his searches by others in the archives of the General Staff in St. Petersburg, where he was assisted by a translator and by Col. A. E. Mychlevsky, of the Military Intelligence Bureau of the General Staff, who was detailed for this purpose.

The entire account, treating with the movements of the French army from the English Channel to the morning of the battle of Austerlitz (Decem-

which strike the key-note of the policy which was consistently followed until 1813. In order to minimize the preponderating power of the British Navy, Bonaparte proposed (1) to blockade England by closing to her trade the coast of the Continent "from Hanover to Taranto," which was to be guarded by French troops; (2) to threaten her with invasion by means of an expeditionary army to be assembled on the Channel; and (3) in case England should induce her Continental allies to make war against France, he was resolved to render these allies submissive to himself if possible. In transmitting these instructions to Otto, Talleyrand made the ominous declaration that

"If England attempts to kindle war on the Continent, her course will force the First Consul to conquer all Europe."†

The two countries rapidly drifted into war which was declared in May, 1803, and lasted until Waterloo. A French army corps under General Mortier immediately occupied Hanover and a formidable army was assembled at Boulogne, the wings of which were composed of detached corps in Holland under General Marmont and at Brest under General Augereau.

ber 2d), had been finished, and the writer, after a colossal amount of work and infinite pains, had nearly finished rewriting the whole, when, in August of last year (1904) he discovered in the bibliography of Fournier's "Napoleon"—the English edition of which he had been asked to criticize for the *American Historical Review*—a work entitled "*La Campagne de 1805 en Allemagne*," by P. C. Alombert and J. Colin. Being very familiar with the thorough work of Alombert as exemplified by his "*Combat de Dürrenstein*"—which treats of the operations of Mortier's corps on the left bank of the Danube during 1805—published in 1807, the writer had well-grounded fears lest they had "stolen his thunder." He promptly sent for the work of Alombert and Colin which was received on September 28th, and found to his dismay that not one single order, report or bit of correspondence between the departure of the "Grand Army" from Boulogne and October 24th had escaped their scrutiny. Even the original maps which the writer copied with such care had been reproduced.

The case, therefore, strongly resembles the discovery of the planet Neptune by an Englishman and a Dane who had worked for years absolutely independent of, and unknown to each other. However, the four enormous volumes and an appendix, amounting to no less than 3000 pages, constitute only part of the work of Alombert and Colin and carry the operations of the French army no further than October 24th. In order for the writer to establish his just claim for the original research on which he has spent such colossal labor for seven years, absolutely independent of and without the slightest knowledge of the work of Alombert and Colin, it was imperative for him to publish immediately some portion of his own work dealing with operations subsequent to those already produced by the Frenchmen. He therefore submitted to the editor of the *JOURNAL OF THE MILITARY SERVICE INSTITUTION* the present article which constitutes only part of his narrative of the operations of November 13, 1805, preceded by a mere cursory glance at those which brought the Grand Army to the gates of Vienna. Comparatively little of the material here published has ever seen print before.

†Fournier, *Napoleon* the First, p. 262, 263-267 and 366.

This "Army of the Coasts of the Ocean" was practiced in embarking and disembarking by means of a huge flotilla of flat-bottomed transports, and was drilled until "it became one of the most efficient fighting machines ever known in the history of the world, its discipline being perfect and its enthusiasm unbounded."* On May 18, 1804, the Senate offered to the First Consul, the title of "Emperor of the French," and on December 2d, in the cathedral of Nôtre Dame, he crowned himself in the presence of the Pope. In England, Addington had been succeeded (May, 1804) by the aggressive Pitt, who forthwith proceeded to organize the Third Coalition composed of England, Russia and Sweden, but it was not until July, 1805, that Austria, in view of her unpreparedness for war, could be induced to join against France. Napoleon had already begun to threaten her in Italy, where she was most vulnerable, thereby causing her to make a defensive alliance with Russia (November 6, 1804) but it was not until July, 1805, that the official "*Moniteur*" and other French newspapers began to publish articles against both Austria and Russia, which were unquestionably intended to provoke a war on the Continent while England was kept in constant dread of an invasion by the army at Boulogne. Indeed Napoleon's entire course of action during the first seven months of 1805 is thoroughly consistent with the policy outlined to Otto two years previously. In view of the inefficiency of his fleets, Napoleon undoubtedly did not consider the opportunity favorable to invade England, and accordingly, as he "always had two strings to his bow," turned his attention toward Austria and began with consummate skill to force her into war. On August 3d he demanded that she withdraw her troops in Italy to their garrisons in Hungary and Bohemia,

"Otherwise if the troops continue to move and magazines to be formed, the Emperor will consider that Austria wants war and, in the impossibility of his sustaining his maritime war, he will march to pacify Austria completely."†

On the 7th and 12th these summons were reiterated with increasing pressure and on the 13th he wrote to Talleyrand:

"My decision is made; I want to attack Austria and to be in Vienna before the month of November next, so as to meet the Russians if they should present themselves."‡

On the 23d, Marshal Berthier, the "Major-General" (Adjutant-

*Stephens, *Revolutionary Europe*, p. 242. Also Marmont, *Mémoires*, II, pp. 302-303.

†Napoleon, *Correspondance*, No. 9038, tome 11, pp. 56-57.

‡Ibid, Nos. 9055, 9068 and 9070.

General) and Minister of War, was instructed to order Marshal Bernadotte to assemble "the Army of Hanover" at Göttingen and for General Marmont to be prepared to move to Mayence with "the Army of Holland" upon the receipt of further orders,* and two days later the Emperor wrote Talleyrand:

"My decision is made; my movement is begun. On the 30th [Fructidor, *i. e.*, September 17th] I shall be in Germany with 200,000 men."†

On the 26th, the "Army of the Coasts of the Ocean," numbering 647 staff officers and 103,655 officers and men,‡ received the new name of "The Grand Army," and Marshal Berthier issued the orders which set 28,000 cavalry and 92,000 infantry§ in motion to the Rhine. These forces were supplemented by various divisions of heavy and light cavalry and dragoons scattered throughout the Empire and by the Imperial Guard from Pont-de-Briques (1552 men) and Paris, and all of them were ordered to rendezvous along the Rhine under the command of Marshal Prince Murat, in the absence of the Emperor. To mask this march and to continue to threaten England with invasion, Marshal Brune was left with a force composed of the third battalions of various regiments which were augmented until, in September, the "First Corps of the Reserve" numbered 785 officers, 15,456 men and 232 horses. The First Corps of the Grand Army (Marshal Bernadotte)|| and the Second Corps (General Marmont)|| were directed to Würzburg and Mayence** respectively, while the Seventh Corps (Marshal Augereau††† was ordered to move from Brest to Alençon and thence to the Rhine at Hüningue and Neuf-Brisach.††

On September 21st, Oudinot's division of grenadiers reached Strasburg, the headquarters of Prince Murat, and three days later the main body of the army had assembled on or near the Rhine between Strasburg and Mannheim (70 miles). On the 25th, the bulk of the Reserve Cavalry and the Fifth Corps crossed at Kehl and occupied the debouches of the Black

*Ibid, Nos. 9119 and 9120.

†Ibid, No. 9130.

‡Count of August 19, 1805. The reserve which was composed exclusively of cavalry, numbered additionally 245 officers and 28,808 men, and the detachment of the Imperial Guard, 1,552 men.

§Count of August 29th.

||19,574 present with the colors.

¶20,922 present with the colors.

**Napoleon, Correspondance, Nos. 9184, 9137 and 9207.

††9,592 present with the colors.

†††Napoleon, Correspondance, Nos. 9158, 9284 and 9368.

Forest to mask the passage of the other corps and conceal the direction of the march across Würtemberg from the Austrian "Army of the Danube" under Field-Marshal-Lieutenant Baron Mack, which had quitted its camp at Wels on September 8th, invaded Bavaria and occupied the line of the Iller, resting on Ulm, with its right under Kienmayer thrown back along the Danube as far as Ingolstadt. In the rear of this screen the Third Corps crossed at Mannheim on the 26th, the Fourth and Sixth Corps at Rheinhausen (near Speyer) and Karlsruhe on the 27th, followed by the Imperial Guard at Kehl on the 30th and on November 1st by Napoleon, who had arrived at Strassburg from Paris on the 26th. The composition of "the Grand Army" was as follows:

	Officers.	Men.
GENERAL STAFF	116	240
IMPERIAL GUARD (Marshal Bessières) 24 guns	314	5951
FIRST CORPS (Marshal Bernadotte)		
Staff	41	214
Cavalry (General Kellermann)	174	2842
First Division (General Rivaud)	263	6101
Second Division (General Drouet)	268	6492
Artillery and Engineers, 34 guns	43	1299 789 16948*
SECOND CORPS (General Marmont)		
Staff	49	96
Cavalry (General Lacoste)	109	1635
First Division (General Boudet)	232	5121
Second Division (General Grouchy)	237	5373
Third Division (General Dumonceau)	271	5742
Artillery and Engineers, 26 guns	76	1817 974 19784
THIRD CORPS (Marshal Davout)		
Staff	49	92
Cavalry (General Viallanes)	132	2037
First Division (General Bisson)†	332	8459
Second Division (General Friant)	315	7511
Third Division (General Gudin)	271	7032
Artillery and Engineers, 48 guns	45	1177 1144 26308
FOURTH CORPS (Marshal Soult)		
Staff	46	92
Cavalry (General Margaron)	130	2039
First Division (General Saint-Hilaire)	334	8858
Second Division (General Vandamme)	334	8947
Third Division (General Legrand)	355	8986
Artillery and Engineers, 36 guns	59	1676 1258 30598

*On October 7th the Bavarian army under Lieutenant-General Baron Deroy united at Ellingen with Bernadotte. This army numbered 24,405 infantry, 2250 cavalry and 48 guns, thus making the total of the First Corps 44,392 and 82 guns.

†Bisson was wounded at Lambach (October 31st) and was supplanted by General Caffarelli one of Napoleon's aides-de-camp.

280 SURPRISE OF TABOR BRIDGE AT VIENNA.

	Officers.	Men.
FIFTH CORPS (Marshal Lannes).		
Staff.....	27	
Cavalry (General Treillard).....	128	2040
First Division (General Oudinot).....	250	6970
Second Division (General Gazan).....	322	6640
Third Division (General Suchet)*.....	363	9139
Artillery & Engineers, 34 guns.....	44	1367 1134 26156
SIXTH CORPS (Marshal Ney).		
Staff.....	44	96
Cavalry (General Tilly).....	144	2024
First Division (General Dupont).....	201	5149
Second Division (General Loison).....	296	7718
Third Division (General Malher).....	285	7316
Artillery and Engineers, 30 guns.....	44	1090 1014 23393
SEVENTH CORPS (Marshal Augereau).		
Staff.....	43	
First Division (General Desjardins).....	255	6571
Second Division (General Maurice-Mathieu).....	231	6037
Artillery and Engineers, 24 guns.....	44	1269 573 13877
RESERVE CAVALRY (Marshal Prince Murat).		
Staff.....	24	
First Heavy Cavalry (General Nansouty)....	150	3075
Second Heavy Cavalry (General d'Hautpoul)....	143	2056
First Division of Dragoons (General Klein)....	162	2464
Second " " " (Genl. Walther)....	150	2229
Third " " " (Gen. Beaumont)....	137	2232
Fourth " " " (Genl. Bourcier)....	157	2212
Dismounted Dragoons (Gen. Baraguey-d'Hilliers).....	187	5635
Artillery and Engineers, 28 guns.....	27	975 1137 20878
GENERAL PARK AND RESERVE ARTILLERY.		
(General Saint-Laurent) 40 companies and 56 guns.....	144	3741
Grand Total	8467	187874†

It is not our purpose to follow here in detail the various movements which culminated at Ulm. Suffice to say that by a precision little short of marvelous, the lines of march were so calculated that this great army of 197,000 troops was concentrated on the 7th of October along or near the Danube within the narrow space between Donauwörth and Ingolstadt (32½ miles) and began to cross the river, driving Kienmayer back to Aichach and Munich, and next day not only routed Auffenberg's detachment at Wertingen but obtained complete possession of Mack's communications and effectually barred his retreat on Vienna. The wonderful maneuvers about Ulm

*Suchet originally belonged to the Fourth Corps but was attached to Lannes on October 9th.

†Count of September 23d. These identical figures will also be found in Dumas, *Précis des Événements militaires*, XII, pp. 321-332.

which—with the possible exception of “the Five Days’ Campaign” ending with Eckmühl (April 22, 1809)—are the most masterful in the annals of war, terminated with the battle of Ulm on the 16th and on Sunday the 20th, Mack’s army of 890 officers and 24,435 men defiled before Napoleon on the heights of the Michaelsberg, while far away beyond Nuremberg, Murat had captured or scattered the corps of Werneck, the Austrian Reserve Artillery, and all the troops which had broken out prior to Elchingen (October 14th) with the exception of a paltry few hundred cavalrymen accompanying the Archduke Ferdinand who barely escaped with his life.

Even before Mack defiled, part of Napoleon’s army had begun its march toward the east, conformably to his intention to follow up his advantages already gained, and to rout the remaining Austrian forces before the Russian armies could come to their aid. On the 24th the army was concentrated on the Isar, whither Bernadotte and Davout had already preceded it,* and crossed the Inn at Wasserburg (Bernadotte and Marmont), Mühldorf (Murat, Davout, Soult and the Imperial Guard) and Schärding (Lannes), driving back the first Russian Army (46,405)† under General Count Kutusoff back along the northern road to Vienna and the Austrians under Merveldt along the southern road. The First Corps was directed to Salzburg‡ and the Second Corps to Laufen,§ while the vanguard continued through Braunau, Burghausen and Ried and the Fifth Corps toward Linz.|| On the 31st, the Allies were encountered at Lambach, driven back from the Traun, and the bridge repaired under a heavy fire; Bernadotte was ordered up to Lambach,¶ followed by Marmont who moved through the valley of the Vöckla.** On November 2d the Reserve Cavalry entered Linz, and next day, with the support of the Fifth Corps, drove the Allies across the Enns but was delayed by the destruction of the bridge at Enns. The lack of intermediary roads caused Davout, Bernadotte and Marmont to be directed

**Registre de Berthier* (General Order Book of the Chief-of-Staff) ix, No. 124, pp. 117-118, and No. 135, p. 123.

†Mikhailovski-Danilevski, “Relation de la Campagne de 1809,” pp. 48-49. The sixth column (8155 men) under Baron Rosen did not join Kutusoff until November 12th (pp. 151-152).

‡Berthier, No. 272, p. 202.

§Ibid. Nos. 306 and 307, p. 219.

||Ibid., No. 281, p. 207, and Napoleon to Murat, Braunau, October 31st, 11 A.M. Napoleon Corresp., No. 9442, 11, pp. 367-368.

¶Berthier, No. 330, p. 231.

**Ibid. No. 298, p. 215.

on Steyer,* whither Merveldt had retrograded only to be driven out on the 4th by Davout. Murat and Lannes crossed the Enns on the 5th and after a hard fight repulsed the Russians from the heights of Strengberg and Amstetten, and two days later reached the celebrated Abbey of Moelk. The scarcity of available roads caused Bernadotte to be recalled to the *chussée* along the south bank of the Danube† while Davout was pushed from Waidhofen through the difficult Styrian Alps toward Gaming, Annaberg and Lilienfeld for the purpose of turning the left of the Russians who were fully expected to make a determined stand at St. Poelten, the last strong defensive position covering Vienna.‡ The Second Corps was directed to Waidhofen and thence through Altenmarkt to Leoben § to cover the right against attacks from the Archduke Charles—who had fought Masséna at Caldiero in Italy on October 29th, 30th and 31st and, upon learning of the annihilation of Mack at Ulm, had begun his retreat toward Vienna—and the Archduke John in the Tyrol, as well as to establish communication with the Bavarian garrison left at Salzburg by Bernadotte and with the Sixth Corps, which had been retained at Ulm until October 27th by virtue of Mack's capitulation and then directed through Memmingen and Landsberg to Innsbruck,|| where Marshal Ney had arrived on November 5th after capturing the forts of Leutasch and Scharnitz which formed part of the line of defense of the Tyrol fortified by the celebrated engineer, Count Chasteler.

Acting on the suggestions contained in reports from Murat (Neumarkt, October 23d) and Lannes (Efferding, November 2d), Napoleon, who had reached Linz on November 4th, gave orders two days later to organize the divisions of Dupont (1st division, Sixth Corps), Gazan (2nd division, Fifth Corps) and Dumonceau (3rd division, Second Corps)—which had become “dislocated” from their proper corps—into an additional corps under the command of Marshal Mortier who was instructed to descend the left bank of the Danube, keeping himself always in the rear of the position occupied by Marshal Lannes on the southern bank.¶ On the 8th, Davout over-

**Ibid.*, Nos. 333, 335, 342, 343 and 352, pp. 232, 233, 234, 237, 238 and 244.

†*Ibid.*, No. 364, p. 255.

‡*Ibid.*, No. 350, p. 243.

§*Ibid.*, Nos. 351 and 359, pp. 244 and 250-251.

||*Ibid.*, Nos. 264, 297, 299, 318, 325, 330 and 334, pp. 200, 213, 215-216, 226, 229-231 and 233.

¶*Ibid.*, No. 356 pp. 247-248.

took Merveldt in the mountains at Marizell, attacked and destroyed his corps, driving the remnants to Bruck where, additionally threatened by Marmont's advance on Leoben, he retreated into Hungary. The expected battle at St. Poelten did not take place, since the wily Kutusoff realized that he could make no serious opposition to the greatly superior numbers of the French, and therefore turned northward to Mautern where he crossed the Danube on the night of the 9th, burned the bridge behind him, and took up a strong position near Krems, his retreat masked by the Austrian troops under Kienmayer which remained on the Vienna *chaussée* but were attacked and driven back from the Traisen. On the 10th, Napoleon reached the Abbey of Moelk from Linz, while Murat, who had received no orders from the Imperial Headquarters since the 8th,* hesitated until he ascertained definitely from his detachments sent toward Mautern that the Russians were safely established on the left bank, and thereupon pushed forward to Sieghardskirchen and the Mauerbach, closely followed by Lannes' corps, in the rear of which Soult moved up to St. Poelten. On the opposite bank of the Danube, Mortier had reached Spitz with Gazan's division which additionally occupied the villages as far as Loiben, and came into contact with the Russian rear-guard. The Marshal had not seen fit to wait for Dupont and Dumonceau who were far in his rear at Marbach, and the First Division of Dragoons (Klein)—which had crossed at Linz on the 7th and accompanied him as far as Grein—had, through some unpardonable oversight, received no formal orders attaching it to Mortier's corps, and Klein had taken it upon himself to make a divergent march which brought him to Zwettel on the 10th. These facts were known through a report from Mortier, whose advance along the left bank could be distinctly seen from Moelk; the dangerous isolation of his leading division, marching into the very arms of the entire Russian army, was fully understood by Napoleon, and the precaution was taken to send Captain Colbert across the river to acquaint him with Kutusoff's position, the probability that his own advance would be opposed "and to warn him to march with caution." Being unmounted, Colbert could not overtake Mortier, but met with Captain Lapointe, one of the Marshal's aides-de-camp, who delivered the message and returned with a

*The Emperor's letter from Linz, November 8th, 8 P.M. Napoleon Corresp. No. 9465. 11, p. 387.

written acknowledgment that "the warning about General Kutusoff's march had reached him," signed by Mortier, which Colbert took back to the Emperor that same night.*

On the morning of the 11th Murat—still in default of any further orders from the Imperial Headquarters—continued his advance to Hüttdorf on the heels of Kienmayer; at 3 P. M. his troops were halted under the very walls of Vienna, detachments were sent to the Danube at Klosterneuburg above, and Ebersdorf below, the city in order to arrest all navigation, and furthermore, the various roads leading to Italy and Hungary were intercepted. Hard behind the Reserve Cavalry, the Fifth Corps (Marshal Lannes) followed to the outskirts of Schoenbrunn and farther in the rear, part of the Fourth Corps spent the night at Sieghardskirchen, while the Third Corps (Marshal Davout)—which had reached its destination on the preceding day—stood at Lilienfeld. Meanwhile, Mortier, disregarding the various warnings received and without waiting for Dupont and Dumonceau, continued to rush on toward Krems into the arms of Kutusoff who had been fully apprized by his spies of the isolation and numerical weakness of Gazan's division.† At 7 A. M. his vanguard encountered beyond Unter-Loiben the Russian skirmishers, followed by their supports, and soon it was involved in a general engagement. After seven hours of hard fighting Miloradowitch fell back, conformably to the plan to lure Mortier into the defile leading to Stein, while three other columns (about 15,000 men) under General Doktoroff moved through the mountains north of Dürrenstein and debouched from the Pfaffen Thal in his rear. About 4 o'clock Doktoroff reached the Danube and turned eastward against Gazan, but most fortunately Dupont had heard the sound of the firing and had forced his march to Spitz, closely followed by Dumonceau; his van had been pushed beyond Weissenkirchen and was soon engaged with the Russians issuing from the valley of the Pfaffen who, however, kept on to attack Gazan's rear, until the whole of Dupont's division came into action. Desperate as had been the previous fighting it paled into insignificance before the awful carnage that ensued. In the narrow defile at the foot of the château of Dürrenstein—which had been the prison of Richard Cœur-de-Lion upon his

*Unpublished memoirs of Édouard de Colbert, given by Thoumas, "Les Grands Cavaliers du Premier Empire," I, pp. 196-197.

†Two hundred and forty-five officers, 5588 men and 12 guns. Count of November 1st, given by Alombert, "Le Combat de Dürrenstein," pp. 38-39.

return from the Third Crusade (1192-1193)—four bodies of troops fought like demons in this modern Thermopylæ, lit up by the burning village of Loiben, where hundreds of wretched wounded were roasted alive. On the east, Miloradowitch hurled himself against Gazan's heroic troops who were making a last desperate effort to break through Doktoroff's columns, which were in turn furiously assailed by Dupont from the west. The attack of the last saved the day; for shortly after 6 o'clock, Doktoroff's men were seized with panic, broke and fled, thereby permitting Gazan's exhausted troops to effect their junction with their rescuers. The battle of Dürrenstein, which was fittingly termed by Napoleon "a day of massacre,"* cost the Russians quite 4500 men, while Gazan's division lost 2118 men†—nearly half of its effective strength.

At 7 A. M. that day, Berthier had issued orders for Murat not to go beyond Purkersdorf, and fault was found for his having precipitated the army on Vienna "like children," thereby exposing Mortier to destruction; Davout was directed to proceed *via* Moëdling to Vienna, and two hours later Soult was instructed to "act according to circumstances during the course of to-day."‡ The roar of the guns in the direction of Dürrenstein was plainly audible at Moelk; at noon the sound had increased, and Napoleon became so apprehensive for Mortier's safety that he could no longer contain his irritability, and, giving orders for the Guard to follow instantly, galloped on to St. Poelten in order to be nearer the scene of fighting. There the noise of the firing was much more distinct and "his agitation redoubled; officers, aides-de-camp, everyone at hand, he sent in search of news."§ An irritated and very unjust reprimand was despatched to Murat for dragging the army on to Vienna|| and Soult was ordered to arrest the advance of his corps, to proceed in person to Mautern, to communicate with Mortier and to make preparations to cross to his support,¶ but it was not until midnight that some very meager news was received from Thiard, one of the officers who had been sent to Mautern.

At 3 A. M. on the 12th, Bernadotte, whose corps had reached

*^{22e} *Bulletin de la Grande Armée*, November 13th. Napoleon, Correspondance, No. 9476 pp. 399-401.

†Count of November 22d.

‡Berthier, Nos. 369, 370 and 371, pp. 258-259.

§*Mémoires du Général Comte de Ségur, "Un aide-de-camp de Napoléon,"* I, p. 226.

||Napoleon, Correspondance, No. 9470, 11, pp. 392-393.

¶Berthier, No. 372, p. 260.

Moelk, was ordered to halt there to get news about Mortier, and to prepare to cross the Danube; Saint-Hilaire (1st division)—who formed the rear of the Fourth Corps in front of St. Poelten—was retrograded to Mautern, Marshal Bessières was instructed to establish guard-posts to Absdorf to facilitate the transmission of news, and Soult was ordered to obtain information about Mortier and get ready to cross.* At 6 o'clock Murat was notified of the "very hot engagement" at Krems and that "at the present moment* * * the main business is to cross the Danube in order to dislodge the Russians from Krems, by throwing ourselves in their rear," for which object he was instructed to enter Vienna at 10 A. M. next day and to try to get possession of the bridge there intact, otherwise to prepare to cross at Klosterneuburg or some other favorable point. About 11 o'clock, General Lemarois was sent to Mortier with a despatch from Berthier asking for news about himself and directing him to fall back toward Linz if necessary, and at noon, Murat was told that if he could cross the Danube quickly he would undoubtedly capture the Russians, while Bernadotte was again ordered to obtain news about Mortier, and to place his own corps in position to cross at any moment.† At 1 o'clock Thiard returned to St. Poelten with additional news and a sketch of the battle of the previous day, followed at 3 o'clock by one of Mortier's aides-de-camp who gave Napoleon a detailed account of the battle, which effectually dissipated his fears that Mortier had been annihilated and caused him to exclaim "We owe a fine wax taper to the Virgin."‡ This officer was sent back with a despatch from Berthier notifying Mortier that he was to form "the corps of observation on the left bank," and instructing him to transport his wounded to the right bank, not to retreat to Linz except before greatly superior forces, for the reason that Murat was about to attack the Russian rear by way of Vienna, and to keep the Imperial Headquarters fully informed by means of the cordon of posts established from Moelk.§ Thoroughly reassured about Mortier, Napoleon then hastened the arrested movement on Vienna, and at 5 o'clock he wrote to Murat not to lose a moment; if the bridge at Vienna were found intact, to cross with his cavalry, Lannes' grenadiers and Suchet, followed by Legrand and

*Ibid, Nos. 374, 375, 376 and 377, pp. 260-263.

†Ibid, Nos. 378, 379, 380 and 381, pp. 264-268.

‡Roguet, "Mémoires Militaires," III, p. 166.

§Berthier, No. 382, p. 269.

Vandamme (Fourth Corps), and to order Davout to set out for Vienna at dawn next day.* Perfect confidence in the outcome of their plans is one of the dominant characteristics of great men, and Napoleon's conviction that the bridge at Vienna would not be destroyed is patent in the additional order sent at 11' P. M. to Murat "to try to surprise the passage of the bridge at daybreak to-morrow," and he was furthermore instructed to have his artillery ready to prevent its being burned, to enter Vienna, to send detachments along the roads to Moravia and Pressburg, to direct himself on Krems with Lannes' infantry, and to leave cavalry posts so as to communicate with the Emperor every three hours.† At 11.30 Napoleon wrote to Soult to remain near Mautern next morning until news had been obtained about the Russians, who were presumed to be retreating, but to overtake his corps before it entered Vienna, and notified him that Saint-Hilaire's division and the 8th Hussars (Franceschi) would remain behind until it were definitely known what Mortier and Kutusoff had done.‡ At midnight Berthier informed General Reille, the commandant at Linz, that the Russians might send detachments in his direction and that he ought to scrutinize them with care so as to protect the bridge at Linz, while Marmont—who had reached Leoben on the 10th—was notified that the French had entered Vienna and was ordered to ascertain the direction of the Archduke Charles' retreat and to transmit the news to Napoleon.§

On the night of the 12th, the "Grand Army" occupied the following positions: on the outskirts of Vienna were the Reserve Cavalry and the Fifth Corps, the former having detachments extending in a huge bow around the city from Tulln to Enzersdorf; on the south, Davout's cavalry had reached Mödling, followed by the rest of the Third Corps, while along the Vienna *chaussée* were the divisions of Legrand and Vandamme near Sieghardskirchen, the Guard and the Imperial Headquarters at St. Poelten, and the First Corps extending back to Moelk and along the Danube; Marshal Soult stood near Mautern with his 1st division (Saint-Hilaire) and his cavalry (Margaron), and directly west of him was Mortier's corps which had been transported across the Danube to St. Lorenz, Arms-

*Napoleon, *Correspondance*, No. 9472, pp. 304-305.

†Berthier, No. 383, pp. 270-271.

‡Napoleon, *Correspondance*, No. 9473, pp. 305-306. —

§Berthier, Nos. 384 and 385, pp. 271-272.

dorf and St. Johann, with the exception of some detachments left on the northern bank at Weissenkirchen and Spitz.

In order to understand intelligently the events of the 13th, we must remember that the day after Mack defiled at Ulm, Napoleon had permitted General Count Gyulai to proceed post-haste to Vienna for the purpose of detaching his sovereign from the Coalition; he had come to meet Napoleon at Linz on November 8th, but was not empowered to grant the terms demanded, and had accordingly been sent back to Francis, returning again to confer with Napoleon at St. Poelten on the 12th. Although these negotiations produced nothing definite and, indeed, served "rather to accelerate than to retard the onward march of the French army,"* their existence was known throughout both armies and peace was expected to be made at any moment.

THE SURPRISE OF THE TABOR BRIDGE AT VIENNA.

The morning of Wednesday, November 13th, dawned clear and cold. General Bertrand, who had been selected on account of his great skill as an engineer to assist Murat and to carry to him Napoleon's order (5 P. M.) to surprise the Danube bridge at daybreak,† had continued on from Sieghardskirchen to Hüttdorf, where he arrived during the early hours of the 13th and, having delivered the order to Murat, made haste to acquaint Napoleon with the information which he had gathered. His report was as follows:

"Hüttdorf, the 22d Brumaire, Year 14 (November 13, 1805). 4
A. M.

AIDE-DE-CAMP BERTRAND TO THE EMPEROR.

The officer who carried the maps which the Prince sent to Your Majesty‡ told me that the bridges at Vienna were cut; the Prince assures me (that they are) not, but the dispositions are made to burn them if we attempt to cross them. An Austrian corps of 8000 men is, they say, on the other side. * * * §

The Prince is to negotiate for the Danube bridge this morning with M. d'Auersperg. If some battalions cross at Klosterneuburg, they will be able to facilitate its success. Perhaps Your Majesty has decided this question with M. Gyulai.

The Prince is extremely affected by the letter which Your Majesty wrote him day before yesterday.|| He has lost courage, energy, activity. He recurs every moment to that which has so profoundly affected him. I do not know, Sire, greater pain than that of displeas-

*Memoirs of the Baron de Ménéval, Vol. I, p. 395.

†Supra pp. 286-287.

‡With Murat's report of November 12th, 2 P. M.

§Auersperg's corps extending from Stammersdorf (Headquarters) to Korneuburg.

||The reprimand of November 11th, 3 P. M., Supra p. 285.

ing Your Majesty, just as nothing flatters more than to obtain your approbation. The Prince experiences this thoroughly to-day. It is certain that he cannot serve Your Majesty as he had previously done. He has not his head with him. * * * BERTRAND.**

Notwithstanding the paralytic effect which Napoleon's reprimand had had upon the habitually gallant and impetuous Murat, his operations for the day culminated in a most remarkable achievement. Sebastiani (1st brigade, Second Dragoons) was instructed to proceed at once to Hüteldorf and the 16th Chasseurs (Milhaud) to Tulln, and orders were issued for the Reserve Cavalry and the Fifth Corps to assemble under the walls of Vienna at 9 o'clock. Preparatory to his entry into the city, the Prince sent General Bertrand, accompanied by General Mossel, chief of artillery of the Reserve Cavalry, and Murat's own aide-de-camp Major Lanusse, to make a reconnaissance to the bridge and to endeavor to get possession of it by surprise or ruse, with the support of Treillard (9th and 10th Hussars, Fifth Corps) and Sebastiani (10th and 22nd Dragoons) and three guns.† To assemble the two corps naturally took some little time, so that it was not until 11 o'clock that Murat and Marshal Lannes, at the head of their respective troops, march into, and took possession of Vienna. Napoleon had realized the dream of Marshal Villars, formed in another age—a dream the accomplishment of which would have prevented the disasters of Blenheim and Ramillies‡—and the Grand Army was the first hostile force to enter the capital of Austria since the days of Ottokar of Bohemia (1251-1278).

Built in a superb basin formed by the majestic Danube sweeping in a broad bow at its feet, and enclosed on the southeast by the distant Leitha Mountains, on the southwest by the rugged Alps of the Steyermark whose spurs, prolonged northward, form the Wiener Wald (Forest of Vienna) and terminate abruptly in the precipitous slopes of the picturesque Kahlenberg and Leopoldsberg§ at the very edge of this river of blue,

*Only the third paragraph of this report is given by Alombert, "Le Combat de Dürrenstein," p. 178, foot-note 1.

†Murat's report of 9 P.M. (*infra*.) This account differs slightly from that given by the *March Journal of the Reserve Cavalry*.

‡Compare O'Connor Morris, "Napoleon," p. 174.

§It was in the church here, built on the site of an ancient castle, that the generals of the allied army under Count Stahremberg, John Sobieski and the Margrave Lewis of Baden offered their prayers for success against the vast Turkish forces under the Grand Vizier Kara Mustapha in the battle which proved the Tours of the East (September 3, 1683).

across which the vine-clad Bisamberg* here confines it in a narrow defile and extending away to the north, merges into the distant mountains of Moravia which encloses the vast plain of the March (Marchfeld),† Vienna yields to but few capitals in the world in the beauty and salubrity of its situation. This ancient city, long the seat of the Holy Roman Empire, was for centuries a most important military post, and constituted the buffer of Christendom against the frequent incursions of the Turks. Its fortifications, planned in the thirteenth century by Ottokar of Bohemia, remained the boundaries of the inner city until 1857, when the ramparts and *glacis* were demolished to make room for the splendid Ring Strasse, architecturally one of the finest streets in Europe. These defenses, flanked by strong bastions even on the northern side next to the Danube and capable of great resistance, enclosed the inner city which in 1805 contained about 100,000 inhabitants, while outside the broad *glacis* spread the immense suburbs that embraced nearly double the population of the inner city and were in turn confined by entrenched lines consisting of a rampart twelve feet high and an insignificant fosse‡ constructed as late as 1704 on the trace of older lines, as a protection against the Hungarians under Francis Rakoczy.§ In its general architectural aspect Vienna cannot compare with such capitals as Rome, Paris or London; its principal value lay in its great importance as a strategic position commanding the only bridge over the Danube between Mautern and Pressburg and containing by far the most important military depot of the Austrian monarchy, crammed with vast stores of powder, shot, 500 siege guns, 1500 field pieces and more than 100,000 small arms. With the exception of a few in England, it was unquestionably the largest arsenal in Europe and its immense supplies were quite enough to provide forces numerically equal to the French army with sufficient material "to make four campaigns."|| Such was the prize, the brightest jewel in the Aus-

*From these heights the anxious and beleaguered Viennese first discerned in the setting sun the glittering lances of Sobieski's relieving force.

†In this vast agricultural plain, dotted with picturesque white villages, lie Aspern—where four years later the intrepid Lannes was killed (May 21st)—Essling—where Masséna won his princely title—and Wagram—where Napoleon defeated the Archduke Charles in the bloody battle of July 6th.

‡Known to the Viennese as the Linien-Wall and the Linien-Graben.

§These lines were not entirely leveled until 1890.

||In 1805 its military importance was greatly enhanced by the destruction of the bridge at Mautern.

¶23d Bulletin, November 14th, Napoleon, Correspondance No. 943, 11, pp. 405-406.

trian crown, which the Emperor Francis was forced to allow Napoleon's troops to occupy without the slightest resistance.

The reconnoitering force which Murat had sent under General Bertrand to surprise the bridge, advanced rapidly through the city but, upon issuing from the suburb of Leopoldsdorf which leads to the bridge, it encountered an Austrian cavalry post stationed at the barrier known as the "Gatterthor." It had been preceded by two French officers disguised as civilians who had driven up about 11 o'clock, and upon announcing that they were "magisterial commissioners," Lieutenant Nicolaus Herbay, the officer commanding the post, came out to meet them. Grouping themselves around him, they proceeded to engage him in conversation, in the course of which they imparted to him the "secret" communication that Prince Murat would immediately come to the bridge since he greatly desired to confer with Prince Auersperg. Herbay had scarcely despatched an orderly to carry this important news to his superior, Col. Freiherr Geringer von Edenberg, than a second carriage drove up in which was seated another man, also in civilian dress who, under the pretext of an important secret mission, demanded to be admitted. In spite of his open threats, Herbay declined most positively to be held responsible for any consequences resulting from his refusal either to admit this person or to go himself out to the carriage. After a long and fruitless altercation, the civilian finally left his carriage, and walking over to the lattice whispered to Herbay "that Count Wrba begged Prince Auersperg to come with greatest haste." This report was also sent to Colonel Geringer at the center bridge.

The exact purpose of these emissaries, particularly the last, has never been fully explained, but it is highly probable that they wished to divert the attention of the Austrian officers on guard and to decoy them away from the gate in order that it might be found open at the proper moment. Thus far they had been effectually thwarted, but Lieutenant Herbay was still occupied in despatching the last request, when he was again summoned to the gate where he found several French generals, one of whom asked him in German whether Prince Auersperg would soon arrive, and furthermore expressed a desire to talk with him in the meantime. While Herbay turned to give instructions to an orderly, two soldiers, who had accompanied the French officers, made an attempt to break

down the gate but the Austrian hussars nearest it did not mistake their purpose and, pursuant to orders, fired off their carbines and immediately galloped back toward the bridge, followed by the rest of the detachment. At that instant Colonel Geringer arrived in response to the first despatch and, after a brief conference, instructed Herbay to ride at full speed to Stammersdorf to make a personal report of the incident to Auersperg, while he continued on himself to the Gatterthor.

The French had, meanwhile, kept close behind the Austrian detachment, and at the entrance to the bridge, Geringer met the French officers who complained loudly that they had been fired upon when nothing at all hostile was intended. General Bertrand introduced himself as Napoleon's aide-de-camp and announced "That Field-Marshal-Lieutenant Gyulai had made a definite agreement with His Majesty, the Emperor of the French, by virtue of which no further hostility should be permitted between the troops of both sides; that they were working eagerly for peace which had almost been concluded and for this reason the bridge over the Danube was not to be set on fire—if it were, Field-Marshal-Lieutenant Gyulai and Count Wrba would have to answer with their heads." To this Geringer merely replied "that he could put reliance in the correctness of all these declarations only when Field-Marshal-Lieutenant Gyulai had assured him so in writing," and this guarded answer drew a pledge of his word of honor as to its truth from General Bertrand who added with evident irritation "that the most conclusive assurance was that he had come directly from the Emperor's headquarters to transmit the news in person to Prince Auersperg with whom Prince Murat also wished to speak." Nevertheless, Geringer delayed admitting the French and begged Bertrand to wait for the arrival of Auersperg, who had already been notified; but Bertrand merely retorted "that Geringer would have to answer with his head for the lives of Gyulai and Wrba which were pledged, and that the entire responsibility would fall upon him in case hostilities should be resumed, no peace be concluded and incalculable harm come to the monarchy as a result of the destruction of the bridge."

So imperious was Bertrand's manner and so probable the truth of his statements, particularly when supported by his word of honor, that he succeeded in imposing his will completely upon the Austrian. Geringer seems to have realized that the French desired to get possession of the bridge unop-

posed, and that as a soldier, bound by military orders alone, he had nothing to do with political events, but the instructions which he had received in the preceding twenty-four hours had been so contradictory and uncertain that he found himself placed in a very unenviable predicament. Bertrand's positive assurances had rapidly undermined his firm resolve; his opposition soon gave way before the irrefutable arguments of the French aide-de-camp who appeared to be clothed with full authority in that he had been despatched by Napoleon himself, and, furthermore, Geringer was far from desirous of shouldering all the responsibility which would inevitably fall upon him if the destruction of the bridge caused the negotiations for peace to miscarry. To avoid grappling with either horn of his dilemma, Geringer hit upon the middle course by which he satisfied his own conscience, and accordingly granted permission for Bertrand, accompanied by three other officers, to cross to the left bank for the purpose of further conference with Prince Auersperg, but he expressly stipulated "that no one else should advance farther onto the bridge until he had himself notified them that the affair had been finally settled." Meanwhile, the French hussars had managed to prevent an Austrian soldier at the approach to the bridge from setting fire to the line of combustibles strewn throughout its entire length, but so decided was Geringer's announcement and so evident were the thorough preparations made for its destruction, that Bertrand wisely recognized that any farther advance at that time would imperil the safety of the bridge and completely foil his own mission. He therefore ordered Sebastiani and Treillard to halt their troops at the approach on the right bank, and accompanied by Lanusse and Mossel, rode forward toward *Zwischenbrücken* with Colonel Geringer.

[TO BE CONTINUED.]

THE ARMY CHAPLAIN: HIS WORK AND WORTH.

BY CHAPLAIN C. C. BATEMAN, U. S. ARMY.



THE qualities and services of the army chaplain are here recounted by suggestion rather than in detail.

Propriety prompts the author to write of his brethren's work and worth while withholding personal mention of individuals by name.

Every entry made herein to the credit of the army chaplain may be traced to some member of the corps serving on the active list within the year 1904. That which is best in attributes and achievements of all may be understood to constitute the characteristics and service of the composite ideal of this article.

I am indebted quite as much to my juniors as to my seniors for valuable object-lessons and examples. Both have taught me much.

THE CHAPLAIN AS A MAN.

A substantial physical basis is essential to success among armed men, since good health is a prime requisite to sustained effort in any exacting sphere of human endeavor.

The chaplain is judged first and last in the army as a man.

His manliness is the key to every situation.

He knows what it means to be possessed of a full complement of manhood's capacities and powers.

The weak, the timid or the effeminate have no place here.

A true man offers no apology for his existence, seeks no sympathy for his lot, spurns the vice of self-pity and looks the world squarely in the face.

"A fellow feeling makes one wondrous kind" and a soldier will "tie to the chaplain" not because of the latter's creed, but because he fills a man's position in a manly way. Failure here is failure everywhere.

THE CHAPLAIN AS A MINISTER.

Having won his way as a man, his message has taken unto itself flesh and is interpreted in the light of the preacher's personality.

The soldier may not be given to habitual reading of the Bible or Prayer-book, but *he reads the chaplain most religiously.*

This judgment is rarely harsh, but when so, a reason may be sought, and usually found.

The chaplain is soon conscious that if he rests upon the meager suggestions afforded by the Army Regulations as guides to the performance of his duties, small, indeed, will be his service.

He is accordingly alive to the personal needs of his peculiar parish, composed of men of every shade of religious belief.

Occupying, as he does, a midway position between the military authority and the private soldier, he forgets that he himself is an officer, while he regards his surroundings in the broader relationship of the shepherd.

If he finds his field quite different from the pastorate in which he made unconscious preparation for his life-work in the army, the readjustment has afforded a happy lesson of enlarged experience.

The minister has come into the service in the vigorous years, from, it may be, an influential parish, where his standing and attainments were fully recognized and appreciated.

He cannot be over forty years of age when appointed, and was necessarily engaged in the active work of a pastor or priest at the time of his appointment.

He is, therefore, not too old to accommodate himself to the requirements of an entirely new field.

If there be in the man's make-up something of the soldier he will find little difficulty in doing this.

The chaplain finds himself thrown largely upon his own resources.

He may be assigned to a station where almost no facilities exist for his work.

These necessary adjuncts he must somehow call into being.

The attitude of the commanding officer is generally cooperative.

A room is set apart in some building or "shack" and dignified by the name of "chapel."

The children of the community or military colony are gathered into Sunday-school and the means to buy books and papers will come if the chaplain "hustles while he waits."

There are no public funds available for these purposes.

In the active field the chaplain gathers his congregation at the sound of "Church Call" on a grassy side-hill, or under a gen-

erous shade while the solitudes re-echo the sweet tones of the portable harmonium—a treasured companion in his travels.

Among the friends of the chaplain corps I would place first, The Women's Army and Navy League of Washington, D. C., and second, the International Committee of the Young Men's Christian Association, of New York City.

These have made grants of organs, hymn-books, literature, and otherwise contributed to the efficiency of the chaplain.

THE CHAPLAIN AS AN EDUCATOR.

It seems quite natural that a soldier should turn to a respected chaplain when in quest of knowledge: quite as naturally, indeed as that he should come to the chaplain for spiritual comfort and help.

My own observation leads me to the view that the "seasoned regular" seeks information more often than consolation.

Not a few officers of the line who have risen from the ranks during the last decade were helped over hard places in their academic studies by the chaplain, who cheerfully reviewed forgotten subjects that he might qualify himself for this assistance.

It is, of course, well known that the post schools for enlisted men are under the superintendence of chaplains.

Here a real pleasure may be derived from a service so distinctly practical and beneficial to men who in civil life were, by circumstances, deprived of the advantages of a common-school education.

Unsatisfactory as the work often is in a post school, because of the constantly recurring military duties, the fact remains that the illiterate man may obtain an education in the army if he will.

But it is not alone in his sanctum or in his schoolroom that the chaplain may widen the mental vision of his flock.

The lecture platform is his, and, summoning to his aid the stereopticon and phonograph, he becomes at once the radiating center of ideas and instructive entertainments.

His connection with the regimental or post library, singularly enough, makes him usually post treasurer, in charge of the bakery, and possibly his prominence invites him to a place on boards of survey, where he may help "fix responsibility" for conditions for which he is likely to be in profound and blissful ignorance.

Perhaps his well-known willingness to do anything within the bounds of reason or propriety makes of him, at times, a man of convenience when he should be concerned with matters directly in the line of his profession.

He successfully operates in many places post exchanges; not, I fancy, because such business properly belongs to him, but because, like a good soldier, he is ready and willing to do his part as others may suggest his part to him.

The position of camp postmaster he finds quite to his hand, since he knows many men by name.

THE CHAPLAIN AS COUNSEL FOR THE ACCUSED.

I am aware that there is dissent from this anomalous service on the part of certain chaplains.

The objections to it are well taken in notable cases.

Some commanding officers are loath to detail or permit a chaplain to act as counsel before courts-martial.

There are unquestionably cases where the testimony is of such a revolting description as to completely upset a minister's mind when preparations should be in order for the sacred service of the Sabbath day.

Personally, I have never been able to fathom the wisdom which requires a witness to testify to the exact unprintable terms used by the accused in an altercation about the barracks.

Why testimony to the effect that the accused used vulgar, indecent, profane and abusive language cannot be taken by a court-martial as sufficient is beyond my comprehension.

But apart from this leprosy of speech permitted and required of witnesses before courts-martial, the position of counsel offers some rare opportunities for gentle appeal, without "preaching," to the wayward soldier which never would otherwise be found.

To do all for the accused that the law allows may not be all that a chaplain can do or ought to do.

There is a mild pleasure and excitement in preparing a good case and fighting the prosecution to the end.

The law and evidence open up a wide realm, and it seems likely that having once invaded this domain, the chaplain will be regarded as "standing counsel" when no one else is available for such duty.

VARIED ACHIEVEMENTS.

A senior chaplain was awarded the war department medal of honor for ministering to wounded men under a heavy fire in Cuba.

A junior was recommended for a like award for a like service in Mindanao.

A chaplain originated the system of indentification of the dead on the field and organized the work of the great morgue at Manila.

A chaplain brought about unofficially the surrender of a body of men in armed insurrection against the authority of the United States.

A chaplain suggested that soldiers, during the progress of war, be permitted to mail their letters and have the same forwarded to any domestic point without prepaid postage.

A chaplain asked that he be relieved of further duty with the regiment that he might give his entire time to those who were down with the yellow fever.

A chaplain sustained the courage and hope of his associates when military camps were being ravaged by cholera.

A chaplain stood close to the surgeon at Siboney, El Caney and San Juan Hill.

A chaplain "was in the right place at the right time" before the gates of Pekin.

A chaplain mollified the fanatical hatred of Moro priests and averted probable bloodshed.

A chaplain rendered signal service in adjudicating the vexing questions of Church and State in Porto Rico and the Philippines.

In times of stress the army chaplain has volunteered for the most arduous service, not shrinking from the prospect of personal encounter during armed engagements.

It is the present, living, active chaplain of our regular army who has been tried literally in the fire and has proved his quality as a man, a minister and a soldier.

With pencil and note-book in hand, he has gathered, while on the march, information not only of value to his commander, but to his countrymen at large.

I will not say that the army chaplain is worth all he costs, for I would not admit that much of the service he has rendered can be reckoned as possessing a value in dollars and cents.

When personal effort, wholly moral and intellectual, when heart-to-heart contact with earnest men of a perilous calling, can be reduced to a chemical analysis and indicated by an algebraic formula; when devotion to the well-being of others can be measured by the yard-stick, then, and not until then, will I admit that the worth of the army chaplain may be estimated in words and figures.

There can be no sort of doubt that the chaplains' corps has grown upon the respect and appreciative regard of the army and the country since our war with Spain.

The fixing of the chaplain's status and the pronounced encouragement extended to him by the line, to which he is best known and by which he is most closely observed, are calculated to invest his position with dignity and render him still more efficient.

At no previous period of our history has the chaplain of the regular establishment been so thoroughly identified with the military service or so heartily commended by his superiors.



THE CALIBER OF THE REVOLVER.

BY MAJOR ROBERT L. BULLARD, 28TH INFANTRY.



HATEVER, theoretically, may be its capabilities and uses, actual service has found for the revolver but one practical use which justifies its retention and covers the trouble of its carrying in war, namely, *to destroy suddenly and effectively, to kill dead, an enemy threatening at close quarters, within, say, twenty paces.* This is its one practical, paramount use, and to this purpose its caliber should conform. This is the use of which in the days of the wild West developed and made the revolver pre-eminently the weapon of the fighting American, and made it, let me say, not of toy caliber, but a real "gun," which means a .45 and nothing else.

This being and having always been the revolver's only real justification, it seems most strange that without any change in its purpose there should have been in its building any change which, like the lessening of its caliber, should reduce its capability of fulfilling that purpose. It is probably due to that spirit of humanity which in long peace begins to hope that war can be made without killing people. At any rate, the caliber is reduced, and thus have we put at the mercy of his enemy, most often now a savage, every soldier of ours who in a real crisis relies upon his revolver to save him.

A revolver is not fit for hand-to-hand encounter, and it is practically useless for fighting beyond twenty paces. For the first, anything or nothing is better—a saber, a bayonet or even a club—and to-day the soldier of every branch is amply armed therefor. For the second, his hope must be in other things, the rifle or carbine; for the revolver does not in practice save him. In such a fight, if he have only a revolver, then must he, and in reality he does, always voluntarily or involuntarily make distance fast one way or the other, toward or from his enemy. He has got to do so in order to make his own arm effective against the enemy or the enemy's ineffective against him. This is experience. The revolver is, then, an arm for close quarters, and for close quarters only. Now at close quarters you must kill your enemy and kill him quick, or he will do as

much for you. It is not enough simply to knock him down, not enough to wound, even to wound him badly; because, over the souls of men fighting and falling at close quarters, even wounded unto death, but not dead, comes a fierce rage and thirst of revenge, an awful desire to kill and sweep their slayers with them into eternity, and often they do it. It is but the crook of a finger, perhaps. Whenever, therefore, we really come to a fight with the revolver, it is necessary to have a revolver that will kill. This the .38 does not.

No better test of our revolver's worth and the fitness of its caliber for the purpose for which a revolver has been provided can be had or ever has been had than in its recent use by our troops fighting in the Moro country. When they fight, Moros fight suddenly at close quarters in the revolver's domain of twenty paces. It is a damning comment on the caliber of the .38 that every officer, man and camp-follower in the regiments which have served against Moros after a first experience laid aside the .38 wherever he could by hook or crook raise a bigger "gun," generally the old .45. Indeed, a department commander who, by constant personal part with troops in the field, knew the need, provided and issued to officers and men as many as he could get of .45 revolvers, gladly taking even the old style, slow-working, single-action ones.

The writer's own experience and observation record many miserable failures of the .38 and its bullet to do what we have a right to expect of a revolver, together with many notable examples of the contrary in the caliber which we have abandoned for the .38.

At San Cristobal Bridge, January 1, 1900, our men ran a small bunch of half a dozen insurgents, as it were, against and over me alone in concealment a little ahead of the men. On they came like a flock of frightened sheep, a machine-gun cracking behind them. Almost poking them in the ribs, I emptied my .38 into them. Never a man hesitated, stopped or fell; never a man seemed so much as to flinch or start at my shots. They never noticed me. I might as well have been working a bean-shooter on them. That .38 never hurt a soul of them. It was probably on account of this kindly treatment that they had the consideration not to take me along with them, as they easily could have done, had they felt so inclined, so helpless and armless was I.

No great while after this in a sudden encounter with insur-

gents at close quarters, an ordinary pistol-shot of my command knocked down and out three out of a bunch of five insurgents with the six shots, rapidly delivered, from his revolver—his .45 revolver.

In a fight by boat last year with the Sultan of Toros on Lake Lanao I suddenly heard a death groan and a fearful struggle behind me. I turned to find in my boat a hostile Moro, kris in hand and the awful fire of murder blazing in his eye. One stroke of his deadly knife had half severed the head from the body of my soldier steersman, and the flashing blade was raining blows into the bottom of the boat at the prostrate writhing form and flying legs of the soldier oarsman who had occupied the place between me and the steersman. The latter, his head fallen sadly forward on his breast, sat bolt upright in his place, dying. Too fast to tell I poured four shots into the mad Moro, but to my consternation they seemed wholly, wholly without effect; and in desperation and bitterness of heart, cursing such an arm and the fate that had given it to the soldier to fail him in his hour of need, I spared the last two shots, springing forward in the last hope of shoving the revolver's muzzle against him, and so to *blow* out his brains or heart. In that hundredth part of an instant he stooped to clear a bamboo bow that looped the narrow boat over the body of the fallen oarsman; I thrust my muzzle against the top of his close-cropped head and fired. Then at last he felt the .38 and sank forward upon his own weapon and the legs of the soldier whose head was against my feet.

A cannon's shot from this place another day in a fight with Moros this happened: A Moro who had just surrendered in our assault on a Moro fort, suddenly snatched a dagger from his clothing and sprang upon a soldier, stabbing with that invisible speed with which only a Moro can work a knife. He reached the soldier's bowels with his very first stroke, but he never made another. A single shot from the .45 of an officer near by dashed him into eternity as if by a million volts of electricity. He never so much as kicked, he hardly quivered. That .45 with one shot saved this soldier's life. Would a .38 have done it? Who that has used it thinks so?

At Paglima Hassan's *cotta*, Jolo, in November of last year, we fought for half a mile through a thick swamp. From their hiding in the bush, and behind boulders and trees at close quarters, fifteen or twenty paces, Moros, with the mad heroism

with which they sometimes fight, repeatedly rushed our men—to die. Three such were killed by an excellent, cool pistol-shot; but, first, it took twelve shots to do it—four per man; second, it was found that each had to be hit in the heart before he was stopped; and, finally, it was a special bullet used. Now, doesn't it seem a little straining, to say the least, to require a soldier in deadly, almost hand-to-hand combat to fire four shots to save himself when he might do it with one? Or a little unreasonable to require him to provide his own special bullets for such occasions? Or introducing unnecessary doubt as to the outcome to require him under such conditions to hit his enemy in just one little spot, the head or the heart? In this last I mean no joke. Only the day before the incident I have just described, I was riding behind the advance-guard along a narrow trail lined with the tall *cogon* grass of the Philippines. Happening to glance back, I saw slipping up behind me a hostile Moro armed with a spear and a meat axe they call a *barong*. As I turned, he plunged into the grass, where he was followed by myself and half a dozen soldiers. For a minute we lost him. While the men afoot were breaking through the thick tangled giant grass, I saw and plunged forward after him on my horse into a small opening, firing from my .38 as I closed in on him shot after shot, which, it seemed to me, ought surely to have brought him down, but did not. He never appeared to notice them, and seeing that he would escape, I dashed right up to him. As he whirled upon me then with raised spear, I shot him with my last round under the left arm. At the crack of the revolver he fell as if struck down by some unseen mighty hand, and the men behind me, now on the edge of the opening, cried out at the sight, "That got him, that got him!" No such thing. He bounded from the earth like an acrobat from a spring mattress. My revolver was empty; I was helpless. The Moro was wonderfully alive and the spear play seemed about to begin again, when the swish of a shower of Krag bullets past me caught him and ended it. I have his meat axe, thanks to the Krags, not to the .38, which though it had hit, had not hurt.

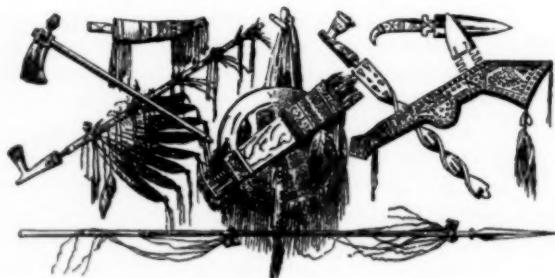
Contrast this:

In Jolo a contract surgeon, mounted, went with my skirmish line in an attack upon Moros in position on a hill. Suddenly there sprang from behind a boulder a Moro in the act of hurling a spear at a soldier at close quarters. The doctor fired; the

spear flew, but missed its good aim, for trembling and death were already in the arm that sped it. With one shot of his .45 the doctor had killed the Moro in the instant between aiming and throwing. Here was a typical use with beautiful fitness of the revolver for the purpose for which a revolver is intended. The .45 hadn't failed like my .38.

Different is this last experience: An officer, .38 in hand, rushed with me in pursuit of a datto who had just slashed at a sergeant and escaped. He headed off the Moro, who hid in the jungle, and when the officer came near, rushed him at close quarters, head down and bellowing like a mad bull, kris flying. In an instant the officer fired three shots, the last just as the Moro reached and struck him. Other shots were then fired by men near, and the datto died at the officer's feet, but not until he had with his awful kris inflicted wounds upon the officer that left this poor fellow at death's door. "I deserve it, major," he said bitterly; "I deserve it for bringing out this .38."

Give us, I say, a gun that will kill, not a pepper-box which, when we use it, only so irritates an enemy that he comes and chops us up with a knife.



THE UNITED STATES VERSUS SPAIN.*

BY AN OPTIMIST.

TRANSLATED BY CAPTAIN JAMES CANBY, PAYMASTER, U. S. A., FOR THE SECOND DIVISION
GENERAL STAFF.

DFOR ages Spain has demonstrated her valor, and now, without fear of being accused of cowardice, can well afford to carry to the extreme moderation and prudence, and seek support and aid against an enemy confessedly stronger than herself, and which proposes to take advantage of that strength. Moreover, it is humane and very advantageous to civilization to avoid as far as possible the spilling of blood, the havoc, the paralization of commerce, and the great loss of property that a war brings with it. No one would blame us for thus avoiding this war, maintaining our sovereign independence, and preserving intact, without resort to arms, thanks to the support of the great powers, the integrity of our territory.

It would be an overwhelming misfortune if after taking this step no one should come to our assistance and we should remain as isolated as we now are. Against this contingency it behooves us to have our strength as it were stored up and ready, and to make a vigorous manifestation of it with manly serenity; facing dauntlessly the dangers, trusting in God and our right, and combating single-handed against the United States even if they were a thousand times more powerful than they are, without despairing of success or of making them pay dearly at least.

The past now has no remedy and of the past I would not speak did it not contain a lesson and a warning for the future.

It is necessary to acknowledge it. In the isolation of Spain there is no small blame on our part. The various governments and parties in power in Spain for many years have inclined to this isolation, moved by a mistaken prudence and by an ill-judged conception of the importance and worth of the nation whose destinies they directed. There are obligations of which Spain can not be unmindful, and there are aspirations and aims that the soul of the nation can not smother in its bosom,

*Continued from the November number of this Journal.

even if it strengthens itself by smothering them. The obligations are preservation of the Antilles and the archipelagos that we possess in the Pacific. The aspirations, providentially or fatally imposed by our history itself, are that no one rules in Morocco without our consent; that we constantly bring closer our relations with the Portuguese, and that we preserve, now that the political ties are severed, a unity of civilization, language and caste between the Peninsula and those that were once its colonies but are now independent States, striving and trying with all earnestness and interest that our prosperity and success increase that of the Spanish-American Republics, in which we feel a paternal pride that we would not see made light of or abated.

With such views and aims the seclusion of Spain is impossible; the solicitude of her rulers not to expose her by engaging her in ventures has exposed her more by leaving her isolated. So that our excessive protective policy has contributed to alienate the good will, or at least to cool the fondness, that some of the nations of the first class ought to feel for us. The example of other nations, who seeking alliances and every venture have acquired advantages apparently unattainable and the delirium of a dream, has not served us as a stimulus. Thus Piedmont, conquered and ruinously taxed after the battle of Novara, has come to enjoy that for which it sought for many years in vain, unity with Italy, only briefly attained under the sway of the barbarian king Teodorico (Theodoric). Austria, in order to have support and alliance, has united herself in close friendship with the two peoples that most harassed her; with the Italians who succeeded in robbing her of the Milanese and the Venetians, and with the Prussians, who conquered her and despoiled her of supremacy in Germany. France herself, putting aside ancient enmities, seeks with sagacious and constant solicitude the friendship of the Russians, praising and flattering them, and making even the freaks and eccentricities of their writers the fashion. Perhaps Spain may be the only nation that from a desire to keep free from entanglements has shunned all friendships and remains alone. If this is so, if no one comes to her assistance, she will be severely punished by finding herself so cruelly abandoned.

Luckily, even without depending upon alliances that we have not sought nor upon sympathies that we have not ex-

erted ourselves to create or encourage, we still have left some hope that the great powers of Europe may place themselves on our side, may incline toward us and be induced to acknowledge our right. It would be strange if they pass in silence the presumptuous effrontery with which the "Yankee" Senators and Representatives have constituted themselves a tribunal of mankind, high-priests of philanthropy and culture, reprobating and anathematizing the conduct of a sovereign nation in its internal government, pointing to its failure, and trying to lay upon it infamous punishments, to dismember it at their caprice and to rob it of part of its possessions. Still more hateful and ridiculous is this pretension on noting what is upheld in the idiotic Monroe Doctrine. What is rationally meant that America must be for Americans? Where are the Americans to whom America by all rights belongs? Those that are left alive the "Yankees" have shut in like wild bulls in a pasture or like wild boars in a pen. Aside from this America is, and will continue to be for many years, of the Europeans. The religion, the science, the language that is spoken and written, is all there from Europe. If there have been there some illustrious historians, some inspired poets, some mediocre thinkers, they have written in English, Portuguese or Spanish; if they have invented anything it has not been of sufficient importance either to change the course or to accelerate the speed and increase the vigor and firmness with which humanity advances on its way elevating itself to higher spheres. All that the "Yankees" have thought, invented or written, is only a brilliant appendix, but nothing more than an appendix, of English civilization. It may be a very splendid tail, but it is only a tail.

The nucleus, the focus, the shining center, the prime motive that still moves humanity on its way is in Europe and has not passed to America, nor is there danger that it may pass. The torch of wisdom and of intelligence, the authority of scholastic degree, the helm of the ship, the center of mental supremacy, have been in Europe for more than three thousand years. Neither the Persians, the Carthaginians, the Arabs, nor the Turks, succeeded in removing them from us in their great and terrible expansions. The great and poorly dissembled desire of the "Yankees" then to remove them from us now is absurd. And if they are not attempting this, if they do not wish a further separation between the hemispheres, what

means the Monroe Doctrine? Even in the Spanish-American Republics, if fortune had been more favorable, and they were not so degraded, the Monroe Doctrine might have some plausible excuse, some just foundation. In them there is an indigenous element; in them there are Americans in truth. Even from the mixture of the Spanish blood with that of the native it might be supposed that there had been born and would develop a race, distinct, and perhaps superior to those of Europe. But in the United States is there anything besides the earth that can be called American? What signifies then the lofty phrase "America for the Americans?" By what reason and by what right, except that of might when they have it, will the "Yankees" undertake to eject from America first Spain and afterward England, France, Holland and Denmark, that are all as American as the "Yankees," and have merited and do merit more praise from Americans, because they have colonized, civilized and christianized her, and planted in her all the virtue, and all the seeds of power and of greatness, on account of which the "Yankees" now carry themselves so boastfully.

In writing this article I have suffered myself to be led by an involuntary impulse, realizing the little value of my protest, and the weakness of this manifestation of patriotism, in comparison with those that many generous and noble Spaniards make, and will continue to make, as for example those that live in Mexico, and in the Peninsula, the wise Bishop of Oviedo and the noble Marquis of Comillas. Ashamed of my insignificance in comparison with these I have hesitated for some days to give this article to print.

Likewise the respect and admiration I still entertain for the Anglo-American nation have made me hesitate, notwithstanding the insults that her representatives have heaped upon us, for I would not in the slightest degree pay back to those representatives insult for insult, lest any one should think that I am trying to offend their nation, even though through our being slandered and she deceived by the vulgar prejudices that unheeding writers have disseminated, and still do, we should become engaged in a war that ought not to be. These unheeding writers have been pleased to picture us to the eyes of the multitude of their fellow-countrymen as a nation of fanatics and evil-doers. Almost they make them believe that we still have the Inquisition, and that we

murdered legally, when we had it, hundreds and hundreds of people. They have very carefully failed to say, either purposely or through ignorance, that in any of the most cultured and civilized nations of Europe, and not having the Inquisition either, there have been committed more cruelties, there have been erected more scaffolds, there have been burned more homes, there have been sacrificed more victims, than religious superstition has caused in all Spain. In England, mother country of the United States, English writers tell of more than thirty thousand sorcerers and witches put to death; kings, queens and martyrs as glorious as Thomas Moore, have perished there, victims of fanaticism. Luther, Calvin and Knox only asked for religious liberty when they were in the minority. In Scotland they even burned witches in the past century. And in the United States themselves, in Salem (Massachusetts alone), they have committed more atrocities and judicial murders solely on account of witchcraft, than in the cause and under the pretext of religion did the Holy Office in all of America then Spanish from Texas and California to the Straits of Magellan.

I do not believe that the mulatto rebels and the runaway slaves of Cuba arouse profound sympathy in the breasts of the "Yankee" legislators, nor that they inspire the hope that, declared independent, they will form a republic superior to that of Hayti, and will contribute more than we to the progress and welfare of the human race, and to the increase and perfection of agriculture, industry and commerce. To me then it is evident that not for love of them but through hate of us the Senate and House of the Union protect them. And this hate, which I deplore, is what I wish to see dissipated. I hold as undeniable that in no Spanish heart, notwithstanding the insults received, exists such hate. Without it, and only through necessity, will we go to war, if we are forced to it; if we are placed as they say, between the sword and the wall. Sad it would be then to have to fight against a people in which we can not but admire excellent characteristics and lofty impulses entirely the reverse of those that stir it to this unjust contest.

That which I admire in the United States, even more than their youthful and almost childish ingenuousness, is their great desire to accomplish tremendous and difficult undertakings, and to see if they can not surpass Europe in every way.

There are in Europe houses of six stories, but the "Yankees" build them of fourteen; there are in Europe high monuments but the "Yankees" build them fifty feet higher; there are in Europe magnificent public buildings which cover hundreds of square metres, but the "Yankees" build theirs to cover thousands of square metres. Everything in America must be higher and larger than in Europe. Is not then the wish to intimidate with threats and bravadoes a nation known to be weak, to encourage the rebellion of a people it is not possible to esteem, and to violate just rights, in contradiction to this earnest desire for superiority, to the "Excelsior" so beautifully sung by a "Yankee" poet and taken as the motto, watchword and device of the nation? President Cleveland himself and all the Anglo-American people ought to protest, without the intervention of any one for us, against the violent and blind attacks that their legislative bodies have been led to make.

There was in the United States, and still is, for, I presume, he is alive, a certain Colonel Ingersoll, who like all his countrymen, wished to go further in his specialty than all the Europeans. This specialty was a terrible hate of God, and a fixed determination to expel Him from the universe, in order that the human race might be more happy free from Divine despotism. As an argument for this expulsion of God the colonel enlarged upon the cruelty with which sinners are punished in purgatory. He said that if his wife, a relative, or any of his comrades, should be suffering eternal punishment, and he was in heaven he would tell God what he thought and go to purgatory with his people. But to this it occurs to me to object. Would it not be better and more prudent instead of quarreling with God, insulting Him and calling Him tyrant, to believe that He is good, and even that all this about eternal punishment may be but a slander that has been raised up against Him in the dark ages, as Colonel Ingersoll calls them. Now apply the story to the present case, and instead of wishing to cast us out of Cuba and insulting us for our cruelties, let it be recognized and admitted that there is not so much cruelty on our part but an exaggerated kindness toward the miserable robbers and incendiaries. This would be reasonable and just: that Colonel Ingersoll leave God in peace in heaven and content himself with attacking Moses, and showing that the latter did not know as much chemistry or geology as he knows;

and that his compatriots leave us in peace in Cuba, recognizing that we must care for it better than the insurrectionists if they should become independent, although we may not succeed in making Cuba the paradise the "Yankees" would make of it, more advanced than we in mechanical arts and more enlightened and sustained by the genius of commerce and industry.

At most I have a certain vague hope, and I fervently pray Heaven that it may be realized, that the great powers of Europe that form a tacit confederation to guide and order the enlightened advance of our kind, may not contemplate with indifference the atrocious indignity of which the Anglo-American Legislature is trying to make us the aim and target. Even I still trust that the mass of the people of the Union will come to their senses, draw back from the deed they wish to engage in, and, full of honest scruples, see and note how much of cowardice, ruin, and treachery there is in wishing to take advantage of our real or apparent dejection and the disturbances that trouble us, in order to humiliate us. I can not bring myself to believe that this people, to-day in the vigor, freshness, and strength of its youth, can exhibit itself playing the ugly part of the ass kicking the sick lion. On account of all these things, it is as possible as it is desirable that the conflict that is threatened may not break forth with horrible destruction like a dynamite bomb, but that it may burst and melt away in the air like a delicate soap-bubble.

Even so, I maintain that we ought to conduct ourselves in an unassuming, peaceful, and prudent manner. We should carry our endurance to the extreme limit. The Spanish Government, with paternal care and loving zeal, should avoid as far as possible the cruel sacrifice of lives and property that an unequal war would inflict upon us; but the limit of endurance reached it behooves us to understand that the precept, "If they ask your cloak, give them likewise your gown," is advice and not evangelical command. No, we must give neither cloak nor gown; we must not yield one inch of ground in Cuba to the cupidity and presumption of the "Yankees"; neither should we continue to pay them tribute, as by virtue of unjust and arbitrary claims of indemnity we have been forced to pay them for many years, humiliating ourselves by paying it.

Rather than suffer such ignominy and so low a fall, all

hopes of honorable peace dispelled, let us declare war upon the United States; let us do it with bravery, and, although our ultimate triumph may seem a miracle, let us hope and trust that the age of miracles has not yet passed.

Who knows if the terrible shock that this war must produce, will not be a salutary crisis that will raise us from the dejection we are in and place us anew among the great nations of the world? All united in a common struggle, we will forget our political rancors, our party divisions, and our unfortunate sectionalisms; we will be neither republicans nor Carlists, Canovists nor Sagastins, but we will all be ministerialists; we will not pride ourselves upon being Aragons, Catalunians, Castillians, nor Viscayans, because we will all be Spaniards.

Our army, far from regretting the war, would rejoice that thanks to it, it would be able to struggle with people that show a front, that are not robbers to flee and hide, and in whose defeat it would be able to reap some glory. Our generals, finally, would rejoice even more, because they would have an opportunity of proving their worth, instead of playing hide and seek with an enemy that secrets itself, and sacrificing their men, not by exposing them to the balls of these enemies and their tricks and surprises, but to the inclemencies and fevers of a climate deadly to them.

Although I am an optimist, although I never lose hope, although I believe that the Spaniards have now the same great personality that they had at the end of the fifteenth century, and during all of the sixteenth, when Spain was at the zenith of its power, still I do not desire the war even if I do not fear it. The citizens in general of the United States are not to blame for the absurd pride, the ignorance, and the cupidity of their Representatives and Senators. And I, without power to remedy it, do not exclude from my love of the human race the people of the United States, where there have been and are men and things that are congenial to me; elegant and inspired poets such as Longfellow, Russell Lowell, and Whittier; some thinkers, if little original at least ingenious and clever, as Emerson, imitator of Thomas Carlyle; several historians, though not profound, pleasant and agreeable to read, except when they treat of their own affairs, when they are as heavy as lead; some amusing novelists; and, above all, men of such inventive talent that they shine, like Edison,

employing electricity in not a few useful and wonderful ways. I admire, moreover, the beauty, the talent, and the refined culture of the American women, who are a most valuable and certain guarantee that if the Monroe Doctrine is carried to its logical end, and the separation between the old and the new worlds established, the inhabitants of the latter will not return to wearing feathers and skins, sacrificing human beings to idols, and eating each other.

I admire the Falls of Niagara, the riches and prosperity of the United States, the magnificence and splendor of its great cities such as New York, Boston, and Philadelphia; the facility and comfort with which they travel there by rail, and the pleasant and hospitable way the "Yankees" treat foreigners when conceit does not blind them, and when they do not get it into their heads that the foreigners are their inferiors, when they are apt to be little enough gracious and very lacking in charity. The poor Chinese, greatly despised because they work for small pay, can vouch for this. But not to tire; it is I who, notwithstanding the insults they have offered us, would rejoice in my heart if they would reconcile themselves with us, would esteem us more, and would end by loving us instead of coming to blows with us.

There is no evil from which good comes not. I am willing to assert that in any event we shall gain something. If we are vanquished we shall lose Cuba promptly, without wearing ourselves out for three or four years pursuing our wandering enemies, against whom instead of sending soldiers, we ought to send dogs and ferrets. And if we come out victorious, and all is possible with the help of Heaven, where St. James still keeps and takes care of his white horse and his arms, then the "Yankees" will be well punished, because it will take some of the conceit out of them, which is their worst fault. And I, although I am oppressed with age and infirmities, will rejoice on seeing the "Yankees" more affable and benign, less hard and insolent toward us, cured of their foolishness in regard to the Monroe Doctrine, and offering us without rancor, the hand of friendship as God commands.

Then would I sing a grand "Te Deum" from the bottom of my soul, and exclaim, imitating the venerable Simeon, "*Nunc dimittis servum tuum Domine, secundum verbum tuum in pace, quia viderunt eculi mei salutare tuum.*"



MAJOR D. Ruggole

TYPES AND TRADITIONS OF THE OLD ARMY.

I. OUR FIELD ARTILLERY.

BY BRIG.-GEN. J. P. FARLEY, U. S. A. (RETIRED).

CAPTAIN HAAN, Artillery Corps, U. S. A., who has made a special study of the action of the field artillery in the recent maneuvers in Virginia, expresses the opinion that "the organization was not such as to develop the use of this arm to its full extent," and he further shows that in the present war in Manchuria "the occasion is a rare one, on which a smaller organization than a regiment of artillery is used in action, a regiment consisting of from thirty-six to ninety guns." This officer advocates organization, including, at least, regiments, and believes that officers of high grade should be given the opportunity to command more than a battalion. This, he says,

Will give an opportunity for training in time of peace the officers and men of this organization to work together in time of war; to work up and apply proper systems of communication and to place the organizations in a proper state of efficiency, so that in time of war they may be controlled by the commanding general in a way that will insure both the proper co-operation with the other branches of the service, and will permit, during maneuvers, the more perfect development and application by the commanding general of grand tactics so necessary in a campaign of the magnitude that may be expected in a war with a first-class power.

The Editor of the *Army and Navy Journal*, issue of November 12, 1904, in his comments on Captain Haan's views and suggestions, from which we have freely quoted, further observes that "officers of the general staff, many of whom are connected with arms of the Service other than the artillery, do not hesitate to say that in their opinion the weakness of the Regular Army to-day lies in its deficiency in the field artillery's strength." In a short time the Ordnance Department will provide all of the field artillery batteries with the new guns and equipment which "will place the field artillery, as far as equipment is concerned, on a par with the artillery of any army in the world."

In turning over the pages of Birkhimer's "Historical Sketch of the Artillery, United States Army," and Haskin's "History of the First Regiment of Artillery," much of interest may be had concerning the field or light artillery arm of our Service, and as it now appears that the time is ripe to secure legislation at the hands of Congress for an increase of the field artillery, and that the present chief of artillery advocates this and other measures for the improvement of his corps the matter of the authorities above referred to is here abridge

and presented in form, it is hoped, calculated to arrest the attention of the readers of the *JOURNAL*.

By Act of Congress dated February 26, 1808, a light artillery regiment was authorized, and to consist of ten companies, but one or two of which were really mounted and equipped as light batteries. Secretary of War Dearborn, by virtue of the law referred to, directed Capt. George Peter, of the artillery, who was at the time (1808) stationed at Fort McHenry, Maryland, to equip the first light battery.

This battery consisted of two 6-pounder guns, one ammunition wagon and one light horse-wagon, in which latter vehicle were carried four cannoneers and one wagoner.

Two battery officers and one sergeant were mounted, and sixteen horses were provided for the guns and wagons. The gun-carriages and guns were of the "Gribeauval," and the caissons of the "Wurst" pattern, the whole being manufactured at Fort McHenry, Maryland, by the artillery artificers. The guns were supplied with fifty rounds each: grape, canister and round shot. For its day, the equipment of the battery was unique and second to none of the systems in vogue in Europe.

To test the battery's efficiency, during the month of May, of the same year, in which the battery was equipped, Captain Peter was directed to march from Baltimore to Washington, and at a rate of five to six miles per hour. The march was successfully accomplished, And when, at a later date, July 4th, it paraded on Pennsylvania avenue, it attracted so much attention and elicited so much admiration, that the authorities largely augmented the battery in horses and guns.

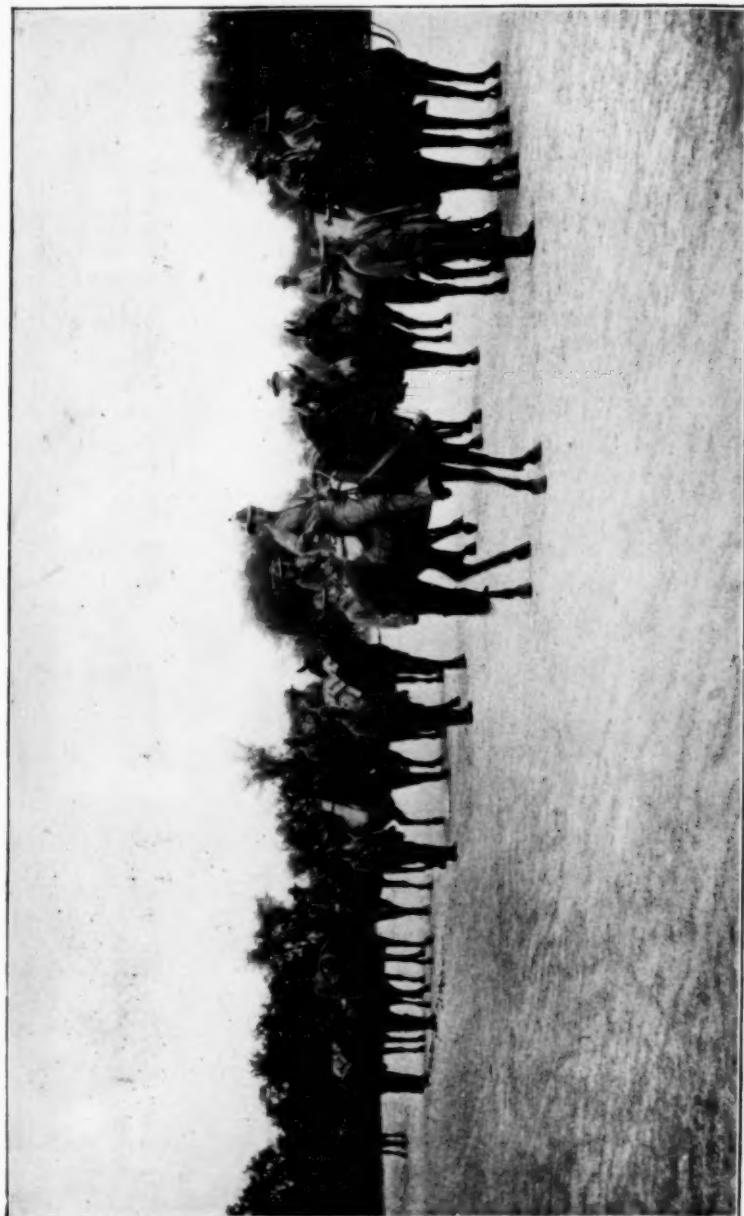
At a later date, Captain Peter marched to Pittsburg, Penn., with his battery, and there embarked for New Orleans. After a year's service with this battery, Captain Peter resigned (June 11, 1809) his commission in the army and was succeeded by Lieut. James Gibson, who remained with the battery until it was absorbed in the effort to mount the other companies of the regiment under the Act of Congress dated February 24, 1812, a law mandatory in its terms, but which was, as the sequel shows, practically evaded.

Captain Gibson was ordered north at this time and, owing to his experience and length of service with his battery, he was directed to equip the second company of the regiment as a battery of horse artillery, and with this battery he joined the army on the Niagara frontier.

Strange as it may now appear, it was none the less true, that in so trifling a matter as the expense attendant upon the keeping of horses, all light and horse-artillery batteries were dismounted; so, as Birkhimer expresses it, "this arm of the service was dismounted almost as fast as it was mounted, much to the discouragement of the men and the disgust of the officers."



MAJOR GEORGE PETER
COMMANDER OF FIRST LIGHT ARTILLERY COMPANY
U. S. ARMY



MOUNTAIN GUN BATTERY

By the Act of Congress dated March 2, 1821, the Regiment of Light Artillery and the Corps of Artillery were legislated out of existence, and four regiments of foot artillery were authorized by the same act. Each of the new regiments were to consist of nine companies, one of which in each of the regiments, was to be a mounted battery. Before the first and only regiment of light artillery had passed away, and its officers were absorbed in the new organization of 1821, its uniform and traditions, as Haskin gives them, here find mention.

The coat of blue cloth was short, with three rows of buttons, and profusely covered with gold lace; pantaloons tight, of white cassimere, with boots to the knees. Gold wings were worn on the shoulders and spurs were always worn. The sabre belt had attached to it a despatch bag called a *sabretache*, which was bound with gold lace and ornamented on the flap with gold embroidered letters L. A.

The cap was also much ornamented.

The men wore, instead of boots, long black gaiters, coming up square under the knees, after the manner of "The Old Guard."

The great feature of the regiment was the mess, as in those days there were but two officers of the regiment married, and but one of these at headquarters.

All officers were required to dine in full dress uniform, and each officer was attended by a soldier, also in full dress. The dinner was the event of the day, especially on those days when guests were present.

So far as the service of the regiment is concerned, it may be said to have been but a paper organization and rarely mounted.

Notwithstanding the law of 1821, authorizing the mounting of one company of each regiment of artillery, it was not until the law of 1837, authorizing an extra company for each regiment, that Secretary of War Joel R. Poinsett, ordered steps to be taken in this direction.

Capt. Samuel Ringgold, commanding Company "C" of the Third Regiment, in the fall of 1838, was instructed to mount his battery, and from that hour the light artillery became a permanent part of our army organization. It is of interest to note, in view of the fame which attaches to the name of Ringgold, that he was a very ill man after his return from the everglades of Florida and after the Seminole War. It was at this time that he entered upon his new and important duties.

Upon his arrival at Carlisle Barracks, Penn., the cavalry depot of the army, all that he had as a nucleus for his horse battery was his company books, one sergeant, and one private, all that may be said to have been left of Company "C" of the Third after its campaign against the Indians in Florida.

He was, therefore, authorized to select men from the First and Second Regiments of Artillery.

In contradistinction to Ringgold's Horse Battery—the three other batteries of the several regiments were light batteries, that is, with the cannoneers riding on seats of limbers and caissons.



DEATH OF MAJOR RINGGOLD.

It is said by those who knew the circumstances well, that at a critical juncture in his illness, Ringgold's physician told him of his perilous condition, but gave him "a gleam of hope." "Save me, doctor, if possible," Ringgold replied, and then closing his eyes for a moment he uttered these words: "Oh, God, let me die on the field of battle!"

The scene was dramatic; the words proved prophetic.

Ringgold recovered, and when the war with Mexico began in 1846, he was at once ordered to the front with his battery, and to him has been accorded the credit "for that perfection of drill and rapidity of movement which the American Flying Artillery exhibited during that war."

At Palo Alto the enemy lost four hundred men while the Americans sustained a loss of but nine killed and forty-four wounded, but among the former was "Major Ringgold, universally lamented both as an officer and Christian gentleman. As his officers offered him assistance when wounded, he said: 'Leave me alone; you are wanted forward.' His prayer was answered; he died upon the field of battle."

But here let us revert to that period (1839) where Ringgold, after having fully organized and equipped his battery, marched to Camp Washington at Trenton, N. J.

This was the camp of instruction for all arms of service, and here it was that Gen. T. R. Fenwick, President of the Board of Ordnance—the first man to lead a section of Gibson's battery of horse artillery to the relief of Van Rensselaer at Queen's Heights—announced to Ringgold the equipment of the rehabilitated arm.

Brigadier-General Eustis, formerly of the First Light Artillery Regiment, commanded the camp of instruction, and at this point three of the mounted batteries, "C" of the Third (Ringgold), "A" of the Second (Duncan), and "B" of the Fourth (Washington) were assembled. "K" of the First was not, at the time, mounted, but was commanded by Lieut. E. A. Capron, later killed at Churubusco, Mexico.*

When mounted, at a later day, this battery was commanded by Capt. Frank Taylor.

The lieutenants of the mounted batteries were temporarily attached for a period of one year, until 1844, after which, under the provisions of General Orders No. 46 of that year's series, permanent assignments of subalterns were made at the instance of the captains who had the selections.

At the outset no extra pay was allowed officers serving with light batteries, and the duty was, therefore, undesirable for many who

* This officer was the father of Captain Allyn Capron whose battery did such good service at El Caney, Santiago, and who later died from disease contracted in that campaign; and the grandfather of Captain Allyn Kissam Capron, U. S. A., and Captain of the Rough Riders, killed at Las Guasimas.

could ill afford the extra expense of the mounts, but Birkhimer here tells us that the men we name "sacrificed their material interests for sentiment, and the battlefields of the Mexican War in which they acted so conspicuous a part, bore testimony before the army and the country, to the thorough manner in which they had been prepared for their, as yet, untried and arduous duties in the field."

There were other batteries mounted during the Mexican War, than those above enumerated, chief among which was "E" of the Third (Bragg), equipped with two guns and two howitzers when it joined Zachary Taylor's Army.

Upon the death of Ringgold, Bragg succeeded to the command of horsebattery "C" of the Third, and tells us that he found it

"in the highest state of efficiency, discipline and drill, of any organization, of any arm he had seen." Then he goes on to say: "It had six guns, six caissons, two battery-wagons and two forges, each having six horses as teams and each gun served by a detachment of twelve men mounted, not on the boxes, but on high-mettled, well-trained horses, which followed as they moved at a gallop, and swept the plain of exercise like a whirlwind."

Without digression the same may be said of Tidball's battery "A" of the Second in 1861—the first horse battery of the Army of the Potomac, and with which the writer had the good fortune to serve as a subaltern during the summer and fall of that year.

An amusing incident occurred at drill on an October morning. The battery usually broke into the gallop as it left the "battery park" and kept up a lively pace throughout its maneuvers. This practice was given to qualify the battery to maneuver with cavalry. The guns were of the smallest caliber, 12-pound howitzers, with range so short that its work could only be done at close quarters.

The Sixth Cavalry ("Cameron's Own"), an entirely new organization, was on the occasion to which we refer, drawn up in line for parade. Notwithstanding that the men had no practice and were barely able to keep their seats, the regiment at a distance presented a very striking appearance.

The officers were in line in front of their companies, the band was at its post and the regiment had received its colors. The glittering blades of the troopers reflected the rays of the morning sun, and the whole made an impressive tableau. The battery at a gallop swung round at the command "Action front!" unlimbered quite near to, and in front of the regiment, and loaded with blank cartridges. Captain Tidball, in a spirit of deviltry, had given the order to load with blank cartridges and fire.

He limbered up and was off again to some other part of the field: the smoke clearing away revealed no trace of the regiment. A panic had seized upon all the horses, and the streets of East Washington were filled with runaways.

Some twenty or more men were on the ground where the regiment had before been in line, and their horses were nowhere to be seen.

For some days, intercourse between the colonel of the Sixth Cavalry and the captain of Battery "A" of the Second Artillery, was suspended; and here we may add that, had this incident occurred at West Point, as between "old cadets" and "plebes," it would have been regarded as a simple case of hazing. The Sixth Cavalry had been hazed; it had received its baptism of fire. The experience may have saved the regiment embarrassment on some later occasion.

But "let us return to muttions" and see why it was and when it was that "Old Zac" thus addressed himself to a battery officer at Buena Vista, "A little more grape, Captain Bragg." Birkhimer has it, that Bragg had just arrived from the left, and was ordered at once "into battery" without infantry supports and at imminent risk of losing his guns, this officer came rapidly into action—The Mexican lines being but a few yards from the muzzle of his pieces, the first discharge caused the enemy to hesitate, the second and third drove him back in disorder and saved the day.

Capt. T. W. Sherman ("Tim" Sherman) succeeded to the command of "E" battery of the Third, when Bragg took Ringgold's battery, and at the outbreak of the Civil War and before Sherman was made a brigadier-general. This organization was known as "Sherman's White Horse Battery." It rendered conspicuous service at Bull Run and later in South Carolina and Florida in 1862-64, when commanded by Capt. John Hamilton. During the absence of its captain on leave, this battery served in the line of batteries on Folly Island, S. C., in the descent upon Morris Island July 10, 1863.*

The work of the light artillery in the Mexican War is but poorly told without mention of James Duncan and light battery "A" of the Second. He was brevetted major for the part he took at Palo Alto with Ringgold, and on the day following at Resaca de la Palma, and later at Monterey he received the brevet of lieutenant-colonel, and for like distinguished conduct at Vera Cruz and Cerro Gordo he was brevetted colonel.

Ringgold and Duncan—what names! What inspiration for light artillerymen of later wars! If, indeed, such inspiration were needed.

The United States Army in 1845 numbered not more than five thousand men. Three thousand of these were at Corpus Christi, Texas, under Gen. Zachary Taylor.

In March, 1846, Taylor moved southward to a point on the Rio Grande, opposite Matamoros, at the time calling upon the governors of Louisiana and Texas for five thousand volunteers. On the 1st of May he moved eastward with his main body to open communication with Point Isabel.

*The writer, an officer of General Seymour's staff, commanded the right of the line of batteries in this action.

To intercept his return, the Mexican general, Arista, moved with about six thousand men to Palo Alto, nine miles from Matamoros, and planted his force across the road. Taylor's returning column reached this point on the 8th of May, and gave battle. Two 18-pounders and two light batteries (Ringgold's and Duncan's) made dreadful havoc in the close ranks of the Mexican infantry, while an attempt to turn the American right was promptly thwarted.

The prairie grass between the two contending lines took fire, and behind the curtain of smoke Arista drew back his left; Taylor made a corresponding change, advanced his artillery again, and renewed



*very truly your friend
James A. Lincoln*

the fight! The movement to turn the American left was discovered, and the guns of Ringgold's battery were wheeled round to meet him, and under their fire the attacking column was put to flight. It was at this juncture the gallant Ringgold fell mortally wounded.

It has been said that the Mexicans were astonished at the celerity of our light battery movements, and the victories of Zachary Taylor over the Mexican's (always a superior force) were due to the efficiency of the artillery arm of his army, notwithstanding the excellent mounts and the brave and impetuous character of the Mexican troops.

Just after the Mexican War, by the Act of Congress dated March 3, 1847, an additional or second battery of the four regiments of

artillery was authorized to be mounted, "I" of the First, (Magruder) "M" of the Second (Roland), "E" of the Third (Sherman), and "G" of the Fourth (Drum).

Birkhimer tells us that:

these batteries as well as the batteries before mentioned, all won in Mexico the plaudits of the army and the country. The old field-batteries were looked upon with affectionate regard by their respective regiments, each of which doubtless would have been glad to see the ancient and honorable associations perpetuated by having these, preferably to any others, equipped for a service with which their careers had been so intimately connected.

In 1865 when the selection of companies to remain mounted was left to colonels of the artillery regiments, and their expressed wishes respected, the original light companies of 1821 and 1847 were without exception retained. The traditions of an honorable arm of service are worthy of respect—a fact recognized by every nation in which the profession of arms has been cherished, and forgetfulness of which has, in every instance, been the surest evidence of military and political decadence; those who disregard them, stifle the noblest sentiment that can actuate the soldier's breast, while evincing an ignorance of human nature well calculated in its effects to freeze up the fountains of true military spirit by the chilling blasts of official indifference or neglect.

* * * * *

Had the field-batteries of 1847 been selected, as those to be rehabilitated in 1882, "how much it would have tended to the development and maintenance of proper military spirit," here we are using the very words of Birkhimer. "I" of the First, "E" of the Third, and "G" of the Fourth, all of which had greatly distinguished themselves in Mexico, should, by all means, have been designated by General Orders No. 96, of 1882, but not one of them was equipped as field-artillery.

In fact, in 1851, six of the eight light batteries were dismounted—but in the following year "A" of the Second (Sedgwick,) and "G" of the Fourth (Hunt), were remounted. Again in 1856, "M" of the Second, "C" of the Third, and "G" of the Fourth were once more dismounted."

"Once more" in this case, is a term that does not strictly apply to "C" of the Third, since it had not before been actually dismounted, serving, as it did, at Santa Fé, New Mexico, after the Mexican War, and simply storing its guns and material at the time, after which in 1850, it was rehabilitated as a light but not again as a horse battery.

This mounting and dismounting of batteries appears to have been based upon political expediency influenced by economy, and it was said in some cases with some degree of truth, to favor certain captains to the detriment of others, to destroy and recreate on personal grounds.

Jefferson Davis, as Secretary of War, dismounted four of the eight light batteries in 1856, while his successor remounted "I" of the First, "M" of the Second, and "C" of the Third, in the year following; but "G" of the Fourth remained dismounted until 1861.

Gen. William F. Barry, chief of artillery of the Army of the Potomac, addressed a letter to Gen. George McClellan, on whose staff he was serving in August, 1861, in which he says:

To insure success it is of vital importance that the army should have an overwhelming force of field-artillery. To render this more effective, the field-batteries should, as far as possible, consist of regular troops.

Soon after this, all companies of the five regiments of artillery (including the new Fifth), with the exception of "H" and "K" of the Second, and "B" and "D" of the Third, were equipped as field-artillery.

General McClellan says in his report: "The creation of an adequate artillery establishment was a formidable undertaking, and had it not been that the country possessed, in the regular service, a body of accomplished and energetic officers, the task would have been hopeless."

When he embarked for the Peninsular Campaign, in the spring of 1862, he had with his several corps, forty-nine batteries aggregating 299 guns, of which 100 were in the artillery reserve.

Of this number, twenty batteries were regulars, representing twenty-six batteries, as some were consolidated for service. Of the eighteen batteries of the reserve, fourteen were regulars, of which five were formed by consolidating two batteries into one. The First Corps (McDowell's), which did not accompany McClellan, is not included in the above estimate.

At Antietam, McClellan had sixty-two batteries; Burnside, at Fredericksburg had sixty-seven, and at Chancellorsville, Hooker had seventy-one.

The effective strength of divisions was about 5000 men and of corps 15,000, with an average of three guns per 1000 men. Of the eight corps at Gettysburg, the first battle after the reorganization of the artillery into brigades, the several corps averaged four and five batteries to each brigade of artillery, with, in four-fifths of the batteries, six guns to a battery.

The cavalry corps had nine horse batteries in two brigades. General Meade's sixty-seven batteries were met at Gettysburg by sixty-eight of the Confederates, which the latter increased to eighty-one batteries for the final struggle in the campaign of 1863.

The general character of the light artillery work during the Civil War may be illustrated by the following instances:

Receiving in silence a most destructive cannonade, no sooner does the time come to open in reply than every piece is used in the most effective manner, the rapidity and accuracy of their fire showing no trace of demoralization. In every case when they are allowed to reply to assailants, it is done with greater promptness and precision and with the most destructive effect. Had it not been for the thoroughly efficient manner in which the batteries

performed their duty, the charge of Pickett's division would have been a success.

The firing of the Confederates became wild at times, and this was especially so just before the final grand charge when they had guns enough concentrated upon the point of attack to have swept the ground perfectly clean. It was a grand effort and would have quickly driven from the field any but the troops who were there to oppose it. The canister-fire of battery "I" was particularly murderous, and after the repulse of that charge the bodies of the slain lay in piles on the hillside and in its front.

Lieutenant-Colonel Füger who was at the time the first sergeant of Cushing's Battery "A" of the Fourth, has informed the writer that on the field of Gettysburg, when the enemy were within 400 yards, this battery fired with single charges of canister.

At that time Cushing was wounded in the right shoulder, and within a few seconds afterward he was wounded in the lower part of the abdomen, a very severe and painful wound. After this he became very ill and suffered frightfully. In answer to protestations that he should leave the field, "No," he said, "I stay here, fight it out, or die in the attempt." When the enemy was within 200 yards, double and treble charges of canister were used.

These charges opened immense gaps in the Confederate ranks as wide as a company front. Lieutenant Milne, who commanded the right half of the battery, was killed when the enemy had closed to within 200 yards, and when within 100 yards Lieutenant Cushing was shot through the mouth and instantly killed.

In front of Battery "A" over six hundred of Pickett's men were found dead; out of his whole division, 5000 strong, Pickett returned with but one thousand. They had done all that mortal men could do.

Then, too, there is something to be said for the West Point Battery commanded by Griffin at Bull Run. Officers became seriously alarmed when Griffin's and Pickett's batteries were destroyed, officers and men wounded or dead, and horses and caissons tearing down in wild disorder, breaking and scattering the ascending line of battle. For who does not know the error on that field, when the Chief of Artillery, addressing himself to Griffin exclaimed: "Captain, they are your battery support." "They are Confederates," replied Griffin, in intense excitement; "as certain as the world they are Confederates!" "No," answered Barry, "they are your battery support." Griffin spurred forward and told his officer not to fire. The mistake proved fatal. The rest we know. This determined the defeat of the Union arms. But there is more to be said of this famous battery.

Its losses at Bull Run were twenty-seven killed and wounded. After this we hear of it (now become "D" of the Fifth) at Hanover Court House, Mechanicsville, Gaines' Mill, Malvern Hill, Manassas, Antietam, Fredericksburg, Chancellorsville, Gettysburg, Rappahan-

nock Station, Wilderness, Spottsylvania, North Anna, Cold Harbor, Weldon Railroad and Appomattox.

What of Gettysburg? Hazlett, our gallant, chivalric, handsome young soldier held Little Round Top, the key of the battlefield, against repeated assaults of the enemy, giving up his life, as did "Little Woodruff" his lieutenant, and the good work of this battery contributed greatly to that glorious victory.

"At Appomattox, the West Point Battery saw its arduous efforts justified by the conquest of a noble peace" and a tablet at our Alma Mater will ever read: "No organization has a prouder record than Battery 'D,' Fifth United States Artillery, the West Point Battery."





DISARMAMENT.

TRANSLATED BY LIEUTENANT-COLONEL A. C. SHARPE, U. S. ARMY.

*(From *La France Militaire* of January 3, 1905.)*

PRESIDENT ROOSEVELT has invited the nations to a second conference at The Hague. In 1898, Nicholas, Czar of Russia, took the initiative in a similar measure. The advocates of universal peace were filled with joy at the thought that the nations, forgetting henceforth their hatred, anger and resentment, were about to embrace each other in an eternal alliance; they dreamed that the golden age was about to return; there were to be no more conflicts, no more wars, *bella matribus destata*. The children of men, knit together in a bond of fraternal affection, were to work harmoniously for one another, and all international disputes were to be settled by a tribunal of arbitration—the Tribunal at The Hague.

"These sentiments are the dreams of a kindly soul," said Cardinal Dubois, speaking of the Abbé of St. Pierre, who also, in the eighteenth century, had proposed universal peace among the nations.

The first conference at The Hague, where twenty-nine of the leading powers were represented, where so many noble ideas for the benefit of mankind were discussed, resulted only in the most unhappy disappointments. The illusions arising therefrom soon vanished under the touch of stern realities and cruel facts—demonstrating in a startling manner that men are not yet sufficiently civilized to become brothers.

It was believed that arbitration might be made obligatory in certain cases enumerated by the Czar. It was thought, for instance, that agreements relative to interoceanic canals would not present any difficulties in this respect, but the United States, who now have control of the Panama Canal promptly discarded this proposition. Italy likewise took the same attitude with reference to monetary con-

ventions, and Germany was unwilling to accept obligatory arbitration in any case.

* * * * *

The government at Berlin formally opposed this proposition, and The Hague Conference was compelled to reject it entirely, protesting, however, that it was an excellent and most desirable idea. Failing in this, they proceeded to provide for arbitration by agreement.

As a matter of fact, they agreed upon nothing substantial at all, not even the limitation of armaments. Many beautiful things were said regarding peace and concerning the regulation of international disputes, but "the gentle dreams of a kindly soul" proved again to be only dreams.

On the day following the adjournment of this convention, England, who had been particularly loud in her pacific and generous protestations, offered a most insolent affront to the peace of the world by hurling herself on the South African republics, where she claimed certain rights—the rights of the *strongest*. The oppressed Afrikanders gave vent to their anguish in cries of distress and supplicating appeals, but they were not heeded. They appealed, indeed, to these very sentiments which had been so eloquently advocated at The Hague Conference; but nothing was done. The nations who had participated in the conference stood by, witnessing their agony and death; and to-day there remains nothing of the Orange Free States and the Transvaal; they have become a British colony. Kruger is dead, an exile in a foreign land; another hero of that war, ignobly employed, it is said, by an American Barnum, recently met a miserable death in a circus in New York or Montreal.

And yet, at The Hague Conference, the English diplomats, leading the delegates of twenty-nine great powers, had declared that violence should be resorted to only in the last extremity, and that all disputed questions between nation and nation should be settled by arbitration. Here certainly was an opportunity for Great Britain to set the example. Before commencing that brutal attack she should have submitted to this tribunal the question of her right to the territories of the South African republics, and should have abided by its decree, whether favorable or unfavorable; but she took good care to avoid such a possibility.

A second drama, quite as serious, is now being played in Manchuria, completely dispelling once again all the dreams of universal peace, and confounding the generous advocates of obligatory arbitration. What madness! They do not seem to understand that whatever the facts, the economic interests or political prestige of a people, these questions always have been and must, in the very nature of things, continue to be settled at the mouth of the cannon.

It is true that in these modern times, wars are not waged to avenge the offended pride of kings. We no longer see a Tourville attacking in the Mediterranean a Spanish fleet because it had not saluted the French flag; but what has been the general character of wars since the days of Louis XIV? Largely wars of commerce; what were the wars of the eighteenth century, the Seven Years' War, so disastrous to our colonies? Wars of commerce. What were those of the first empire? All wars of commerce. What was the meaning of the Continental Blockade—what the significance of the present conflict in Manchuria? Simply wars of commerce and poli-

tics. Russia and Japan were destined to this fatal encounter, and it cannot be seen how arbitration could have successfully intervened in their case.

For two hundred years Russia has been trying to acquire a port on some open sea, realizing that without such a port she can never aspire to first rank among the great commercial powers; in Europe, she is shut up as in a prison; hence she turns toward the Pacific as if in obedience to a law of attraction. There was a time when she hoped to reach the borders of the Indian Ocean through Persia—Persia, struggling between two powerful and redoubtable neighbors. She has revived in that part of the world for her own advantage, the once colossal empire of Genghis Khan and Timor. The Trans-Caspian Railway, due to the genius of General Annankoff, now stretches across this immense realm. Even the great desert of Kharsur athwart the path, has been overcome with the greatest sacrifice, proving no obstacle to the faith which has animated the policies of the Czar.

Defeated in the west by the hostile diplomacy of England, Russia is persistently pursuing her economic policy in the Far East, in the Gulf of Pechili and at Port Arthur. The Cassini Treaty, wrung from the Tsung-li-Yamen, enabled her to bind these remote countries to the central government at St. Petersburg by the great Trans-Siberian road. This accomplished, she seemed about to realize her fond dreams; she was about to become the redoubtable commercial rival of England. The rich products of the great Chinese Empire were to be absorbed by her merchants; extending her influence over Korea in concert with Japan, her peaceful conquest seemed to be complete.

But suddenly a nation rises like an apparition on the horizon of the Orient; Japan, victorious in 1894 in its war with China, although deprived of the fruits of that conquest by the European powers, sees with alarm a rival power extending its influence over the gulf of Pechili, and laying its hand on the great empire of China. This new nation also has been dreaming of dominion in the Chinese seas and of extending its influence over the "Sons of Heaven." This new nation, which has now taken its place among the great military and naval powers of the world, sees its political and economic interests menaced by this Russian invasion on the borders of the Pacific, and it declares war.

Could this fatal encounter between two great powers having the same aspirations and the same interests in that quarter of the globe, have been prevented? Could obligatory arbitration have been imposed upon these contestants? Is this not, alas, an indisputable evidence that war may sometimes be a necessity, sometimes inevitable?

What must be our conclusion? The second Hague Conference will not prevent these great tragedies when the independence the economic interests, or the national policy of a people are threatened; they may, perhaps, formulate certain rules of international law for the regulation of war on land and sea; perhaps a permanent arbitration court, in unimportant cases, may be able to make use of the beautiful palace which a philanthropic American has left seven and a half millions to build; but we should bear in mind that the words of a great writer of the seventeenth century still remain true: "We should always be prepared for war. * * * The better our preparation, the less our liability to have it."

THE STRATEGIC FEATURES OF THE OPERATIONS IN
MANCHURIA, AS ILLUSTRATED BY EUROPEAN
AND AMERICAN CAMPAIGNS.

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(*A Lecture before The Royal United Service Institution.*)

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THE very first point that appears to me to be the greatest lesson is only another confirmation of the wisdom of the ages. The most certain oracles of time have been illustrated in our own generation again and again. They have been illustrated in connection with the great Civil War in America; that is a little before my period of personal observation, but I see officers before me who could repeat every phase of it off by heart—officers of both services. They have been strikingly illustrated by the collapse of France in the year 1870-1871. I refer to this now at the beginning because I have to illustrate the strategy in Manchuria by the strategy of the campaigns in Europe and America. They have been further illustrated in connection with the Turkish campaign, 1877-8, and strikingly in connection with our recent campaign in South Africa, to which, because it leads to political and other disagreeable discussions, I will not refer from a military point of view, and of course, the less politicians say about it the better—I mean to say, the better for the politicians.

Now, what are these principles again illustrated in Manchuria? The first is the old Roman proverb, that if you wish for peace you are to prepare for war; but *a fortiori*, if you are about to be involved in war you are to prepare for war. The preparation for war is the first and second and third duty of a State, as long as human beings come to life, generation after generation, with their present ideals and limitations. It admits of no question: *Si vis pacem, para bellum; si vis commercium, para bellum; si vis gloriam, para bellum.* If you wish even the prolonged existence of your community, prepare for war. Now, do not you see in Manchuria that the principles of the oracles of time set forth in 1870 by the banks of the Rhine have been exemplified by the banks of the Yalu and the Sha-ho? Here is a great community, Russia, with large pecuniary and with perfectly prodigious and inexhaustible material resources, and with long and honorable military traditions. There is some doubt about the population; but at the least computation I suppose Russia has 150,000,000, and at the very most, I take it, Japan has 50,000,000, souls; at any rate, about three to one. Now, how does it come to pass that this new military power can challenge a power like Russia, with such a long history of military distinction, and with a reputation for the absolute invincibility of its troops on the field of battle? What is the cause of that? Is it because the Japanese man in the year 1900 was by nature a very much bigger and better and stronger man, with bigger brain power than the Russian man? Certainly not. Why? Because the Japanese prepared for war in time; they made Wisdom their goddess; they eschewed selfishness and folly. They recognized the secret of national greatness for an island. What is the secret of national greatness for an island? Naval invulnerability. They recognized the secret of national expansion for an island. What is the secret of national expansion for

an island? Military expansibility. They recognized these two facts; they recognized what the American general said: that no more brutal folly or ferocious folly could be imagined than for a nation to deliberately send forth across the seas or across the frontier the prime of its youth, inferior in intellectual equipment, inferior in physical development, in *matériel*, purchasable things, to its death. Do you want an example of ferocious folly? It is ferocious folly in its quintessence, for the rulers of a State to get the best manhood of the State, to give it inferior guns, inferior horses, inferior medical supplies, old curiosities, Slade-Wallace equipments, inferior training and for the lowest purposes of paltry economy to send it forth like sheep to the slaughter. The most certain oracle of time is that the nation which acts in this fashion will decay, will be defeated, will perish, and the nation that acts as the Japanese have done for the last thirty years will probably thrive and prosper. This is the secret of war, and that is the first oracle of time. A philosophical humanitarian, otherwise a pompous silly crudity of a person, would have had us believe at the time of The Hague convention that these theories were out of place at the close of the nineteenth century. These have been strikingly confirmed in one sense in 1899 by ourselves, and in another in 1904 by the Japanese.

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Here is another oracle of time: "No nations which do not directly profess arms may look to have greatness fall into their mouths" (Bacon). I strongly advise you, therefore, to trust not to any contingent remainders of arbitration treaties, but to a proper navy and a proper army. The weak will always be mulcted in arbitrations, which are screens for nerveless policy. Would the United States submit the Secession question or the Monroe Doctrine to Western European arbitrators? I trow not.

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Command of the sea and its effects have been powerfully displayed by the Japanese. Had the Russians been as powerful by sea as they expected to be, the history of the war would be very different indeed; the Japanese would now be even worse hampered than were the Confederates in 1863.

Observe the effect of a peninsula on the strategy of a sea power whether the peninsula be European or Asiatic. You have a map of Europe; look at the Balkan Peninsula, and consider how Russia was hampered by lack of sea power in 1877-8. The Italian Peninsula—the Spanish Peninsula will also do for my purposes. The peninsular power that has command of the sea in the Mediterranean unquestionably can preserve the main body of its territory absolutely intact. Thus the Greeks, the Romans, the Turks, and the Spanish in turn ruled the waves. When the Romans lost command of the seas for a while, the Carthaginians did as they pleased; when the Romans won it, the masterful genius of Hannibal, when he managed to pass the Alps into Italy, could not ruin Rome.

When the theater of operations is a peninsula, the effect of naval power is twofold. I have no passion or prejudice in this matter at all. Suppose the Russians beat the Japanese—I do not think they will—but suppose they beat them on the Sha-Ho and made a strategic counter-stroke, and advanced from the defensive to the offensive, and got past the Yalu and got into Korea, and the Japanese had still command of the sea. The further the Russians got down into Korea the

more uncertain their position would become; for instance, take Gensan, Chemulpo, etc. As the Russians went down toward the foot of the peninsula they would be dragging at each move a lengthening chain. For the benefit of the ladies I will demonstrate the principles of lines of communication by which armies live, on the board; but these principles are the foundation of the art of war, and quite familiar to my audience. An army, as a rule, lives from behind. As the Russians advanced down Korea, their flanks would be exposed to raids from the sea. The enemy could draw them down to the end of the peninsula, and then check them, and turn on them to drive them back, and exhaust them, and cut their lines of supply. Each army corps would eat out nine miles by five in an ordinary rich country in one day; therefore, each division has to bring up five miles of wagons. (The German Army has wagons enough to reach the whole way from the Elbe to Russia, if it were to mobilize.) Consequently, the line of communications is a vital matter. When a continental power goes into a peninsula, and the people are hostile as they were in the Spanish Peninsula to the French, or the people are merely non-martial races—a kind of contemplative philosophers absorbed in the ease of decadence—then the sea power is perpetually on the flank of the invading power threatening it. That strategy has been admirably illustrated by the Japanese. In describing the Japanese strategy till they crossed the Yalu and gained New-chwang, I am merely repeating the lessons of our war against Napoleon and his marshals in the Iberian Peninsula. They constantly threatened the Russian communications while securing their own. Therefore, when you look at a map and want to study strategy, and you assume sea power, you will find in all history that the sea power will invariably get at the peninsula if it can, or the peninsula power will draw the invading continental power down toward the apex of the peninsula, cover its own lines on each side, threaten the enemy's lines, and drive him to retreat. Thus Wellington protracted the war in Portugal and Spain from 1808 till 1813.

But the advantage of a peninsula to a sea power soon begins to diminish, if it advances from the peninsula into the heart of the continent. Then the conditions become equal again, and with each day's march the balance of the advantage turns more and more in favor of the land power.

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We now come to another principle, the principle of converging lines and their application. Now look at the little map of Virginia. The Federals were advancing on converging lines into the Shenandoah Valley from Western Virginia, and into Eastern Virginia from the Potomac, and from the sea. Hence their columns were separated on exterior lines, and Lee and Jackson and Magruder and Anderson, acting on interior lines, beat them in detail again and again in 1862 and 1863.

It does not make the least difference whether Alexander the Great is fighting against the Persians, or Cæsar is fighting against Gauls, or the Black Prince is fighting against Du Guesclin, or whether Turenne or Frederick, or Marlborough or Napoleon, or Lee or Osman Pacha be the hero; the principles of strategy are exactly the same. It was thought by some red-tape European soldiers that mere tyros were about to make ridiculous campaigns in Virginia, and it was said that the Federal and Confederate soldiers would know nothing about

the art of war. But these same soldiers happened to have had the very best college at that time in the world—West Point—and a great number of the officers were so familiar with military history, that in discussing the plan of campaign they used to say: "Shall I do as Marlborough did, or as Napoleon did, or as Wellington did?" knowing that the other officers, their superior or inferior officers, as the case might be, thoroughly understood what they meant, because each knew that the other knew perfectly the operations of Napoleon or Wellington described in history. So it came to pass that every one of the principles of the Napoleonic wars was put into practice in America. But the Federal leaders remembered another striking incident in history; they remembered the command of the sea, and they had very good reason. The thirteen colonies won their independence, not by any great strategy on land, not by any great tactical superiority over the British in the field, because they had neither, nor did they pretend to have. They got independence because the British fleet for a short period lost command of the sea. If the gallant admirals present disagree with me, I know they will slash me to bits at the discussion. But I assert they lost command of the sea for a few months. The gallant admiral (Sir E. Fremantle) says, Yes. That was in 1781, and it was all the fault of Admiral Graves—it was either the fault of the government or Admiral Graves—I fancy it was the government; the charlatans of party strife have cost many a loss of prestige and holocausts of men, and if they don't improve soon they will cost us all our Empire. The fleet was not able to cope with the situation for a few weeks, and in those few weeks Cornwallis had surrendered Yorktown.

There were distinguished generals in the United States of America on both sides of their own Civil War, a far fiercer struggle than their War of Independence—the Federals and the Confederates; they comprehended the value of sea power. Look at the little map of Virginia. Do you see Washington and Richmond? Do you see Chesapeake Reach on my right? Then you see broad and navigable rivers coming into the sea; you see the railway lines of communication from Washington, Gordonsville, and Charlottesville to Richmond, and lines of communication by Fredericksburg to Richmond. All through the war the Federals, once the little *Merrimac*, ironclad gunboat, was disposed of, had absolute command of the sea, and accordingly they not only blockaded all the ports of the Confederates, not only prevented them selling any of their cotton in Lancashire—so far reaching are the effects of the futile folly called war—but they sent expeditions up into the very heart of the country; they sent expeditions up the Mississippi, which enabled Sherman to traverse Georgia in due time; they sent up expeditions to Richmond. They were always on the flank of any invasion of Washington from Richmond northward, the same as the English in the peninsula were always on the flank of any invasion once they had possession of Portugal, from the south of Spain to the Pyrenees, and from the Pyrenees southward to Lisbon. "He who hath command of the sea can take as little or as much of the war as he pleases"—in Virginia, Asia Minor, in India, in Manchuria. When McClellan failed to get to Richmond in 1862, and was cut off from his line of communication at Whitehouse, on the York River, he immediately changed his communications to Harrison's Landing, imitating Sir J. Moore. So we have these points established again

in the American Civil War, change of base and threatening hostile flanks, and feeding one's own army by a flank by means of sea power.

We now come to another strategic principle—dislodging an enemy by repeated threats against his positions and his line of supply. This has been the recent aim of the Japanese against Kuropatkin. The French would gladly have done this, 1870-71, and cut the Paris to Nancy railway line, but the Germans had such an enormous host, and they were so ready and well equipped, well fed and well handled, that they covered the whole railway. But the distance from Strasburg to Paris was short compared with the distance from the Mississippi to Savannah or the Manchurian distances. It was only 250 miles from Paris to the Rhine, but even those 250 miles were such a serious matter that the Germans had to put 150,000 troops along that line, independent of their field armies south and north thereof. And you remember well enough, such of you as were sent for philosophical, humanitarian purposes, to South Africa, the long line of communications, longer, even, than Kuropatkin's or the Germans'. The line of communication between Cape Town and Pretoria is nearly 1000 miles in length, and that is a good deal longer than the lines of communications of most armies. Of course, the longest in modern wars, in a way, was Napoleon's between Paris and Moscow—1500 miles—in 1812; but then he had allied States half the way, as long as he was successful; they turned on him in 1813. He really only had about 600 miles of communications, from the frontier of Prussia to Moscow. All through history when there is only one road or rail, or even two roads or rails or a narrow line of operations, the supply, the food of the army is a matter of vital importance. In the presence of ladies I will not quote the exact words, but armies march on other organs than their legs. The American colonel, Wagner, lecturing at West Point a short time ago, sums up the art of war more concisely than most lecturers. He says the art of war is just simply three things: *a*. That soldiers must get plenty of food, like other men. *b*. That not only must they get plenty for their own bodies, but they carry with them deadly weapons which exhaust an enormous amount of material, and they must get a constant supply. Very often it takes as much lead as a man's weight to kill a man. They must keep a constant supply of replenishment, repairs, and every thing else needful for these weapons. Then they use hordes of horses, like Mongolian invaders. Napoleon had 150,000 horses when he went into Russia across the Neva; and I think you had 400,000 horses, all told, in Africa, and the horses want food. So you have two points: men and animals, moving cities of 300,000 or 400,000 population, equal to the population of Dublin or Belfast, all to be fed; any interruption of supply for a few days means an appalling disaster. In the American Civil War there were 900,000 men in the field at the same time; in France, in 1871, there were one million men on the German side alone. In the American Civil War there were 300,000 Federals dead in four years. These vast moving cities, moving to destroy each other, must, in their course, be perpetually fed; and the amount of ammunition required passes belief. Those are two of the leading doctrines of the philosophy of war. And the third is, to use the American colonel's phrase: "That two men will always whip one." Whipping is a more serious matter in war than in the nursery. This phrase implies that the next strategic consideration is concentration of force, superior to that of the enemy, at a

vital point. Now, inasmuch as an army must live by the line of communication, it has always been a great point for the assailants to try and cut the line of communication. The base of the army, every lady now knows, is the place from which it gets its food, its ammunition, and its recruits, and to which are sent back its sick and wounded. The line of communication is a railway, or road, or river, canal or estuary.

Chattanooga is on the Tennessee, and it was the immediate base of Sherman in a very remarkable campaign in 1862; Atlanta, an important town in Georgia, was the objective. The distance was about 110 miles. Kuropatkin entrenched; so did the Americans under General Johnston. So fond is Professor Wagner of his art, that he says it is really a pity Johnston was removed, because everybody engaged in the war would be soon dead. No man can live forever. Looking at it from that point of view, he says it was a great pity that the Confederate Johnston was retired by his government, because if he had only remained a little longer he would, with the loss of only some 10,000 men, have left behind some splendid military lessons with regard to detaining operations in war. I would not say anything so heartless as this, but it is said by Wagner, who is an eminent strategist; in fact he is the gentleman who has drawn up magnificent schemes for the invasion of Canada, which I would like you to see. They are interesting to a degree, and I have a very high admiration for him. Now, General Johnston did not want these Federals to get to Atlanta. Accordingly, he fought detained battles at different places: Rome, Dalton, Resaca, Kenesaw, and so forth. He fortified each position; the woods gave him ample material for fortification. Sherman came opposite him, but Sherman could not dislodge him by front attacks. When he tried to do so the loss was excessive. Sherman accordingly tried turning movements. Instantly Johnston retired, and did the same thing again, whereupon half of Sherman's force marched along about twenty or thirty miles and entrenched opposite Johnston, and the turning movement was repeated by the other half. A front attack or a counter-stroke on the other side was perfectly out of the question; it would be as futile and wasteful as Grant's at Cold Harbor, as, indeed, it has been in some of the later Manchurian operations. Is it not the case that just now the Japanese and Russians are heavily entrenched, not a mile apart in some places? The positions were generally along rivers or near mountain defiles or in woods; but the Tse and Sha and Hun are much easier words than Chickahominy and Rappahannock and Pamunkey, and other American battle sites. The turning movements of Sherman against Johnston lasted four months; then Atlanta was taken and destroyed, and the formidable, indeed terrible, Sherman, abandoned his line of communications and lived on the country during his next march to the sea at Savannah. There can be no question that some of the British operations in the peninsula are, as the French strategist, Vial, says, models of the art of war. Jackson, Sherman, the Russians in 1812, and Kuropatkin, have imitated Wellington by way of retirement, and the Japanese threats against the Russian line are only, on a larger scale, a repetition of Wellington's campaign of 1813 against Joseph and Jourdan. The latter were far more successful, and the Frenchmen did not make anything like as good strategic defense or tactical resistance as the Russians have done. The numbers were fewer, but the principles were the same.

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Let no one sneer at the Russians for retreating nor at the Japanese for suspending operations after great and bloody battles. Napoleon, Wellington, Moreau, Turenne, and Gustavus Adolphus all conducted skilful retreats. Strategic pursuits after bloody battles are unusual; the Germans were slow after Wörth, Lee failed to pursue after Fredericksburg and Chancellorsville.

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I have said enough to prove that soldiers act in pursuance of mighty secular forces than brutal ambition or ferocious folly. War is not brought about by soldiers. Literary men and orators have been often far more rash and ferocious than any soldier, and the prolongation and half the horrors and two-thirds of the expense of war, are caused by political triflers, game players and schemers.

Before war breaks out there are many oracles of time that point out certain methods of facilitating the success of the national leaders in battle and of limiting its duration and diminishing its strain and minimizing its loss.

After war breaks out the principles of strategy are so simple that, as Von der Goltz says, any ordinary man of business could master them in a few weeks sufficiently to follow the progress of a campaign with absorbing and intelligent interest.

It is also, as my late friend, Colonel Henderson said, as General Sherman said, and as Pitt said, an infamy, an outrageous breach of honor and duty, for men entrusted with the destinies of a people to send the fighting men of their State to be slaughtered by their enemies in the field for lack of training, organization, sufficient numbers, armament and equipment.

GUN EROSION.

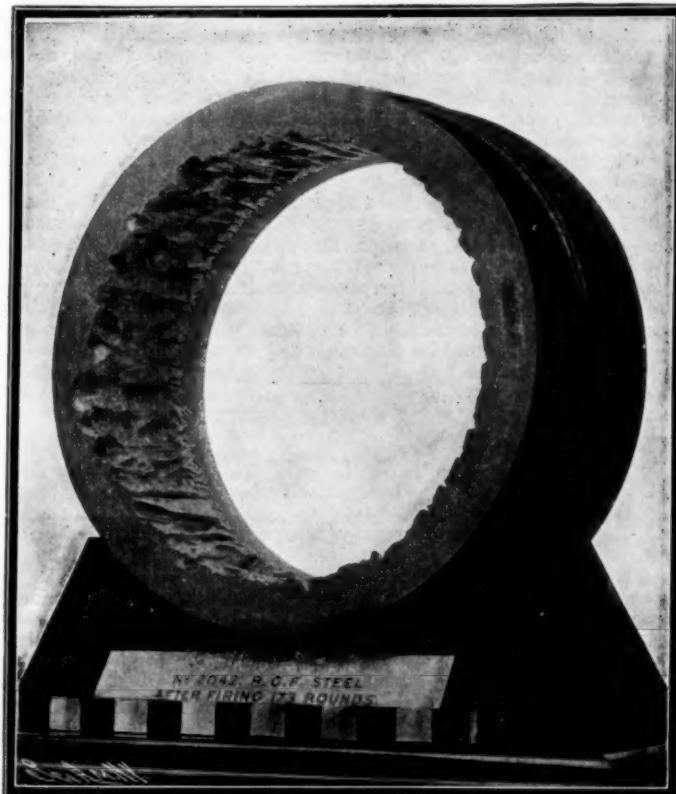
(The Scientific American.)

THE high velocities and increased energy of modern guns have not been obtained without the sacrifice of other desirable elements in the gun. The most serious trouble that confronts the modern artillerist is the tendency of the smokeless powders, that are now exclusively used, to burn out the interior lining of a gun, particularly near the powder chamber. The powder itself is the cause of more or less anxiety because of its chemical instability. In our own navy we have recently seen the issuance of an order to reduce the charges in all guns using a certain brand of powder, of which extensive shipments had been made to our various vessels.

But that is another story. The erosion, or burning out, of the interior tube of the gun, which is that portion in which the rifling is cut, and which is in immediate contact with the powder gases, is due to the high pressure and intense heat of the powder gases. At the instant that a charge is fired, even in the case of modern, slow-burning powder, a great volume of gas is generated and being confined in the powder chamber by the projectile, its pressure rises to an enormous figure, which, in the case of the service charges in the United States guns, is as high as seventeen tons per square inch. This is accompanied by a proportionate rise in the temperature of the gases. If it were possible to look into the powder chamber at the instant of discharge, it would be found to be at a dazzling white

heat. As the projectile begins to move down the bore of the gun, these white-hot gases rush out of the powder chamber, and as they stream from the larger chamber into the smaller bore, they literally melt the hardened steel surface of the bore, the process being probably assisted by some chemical reaction not yet thoroughly understood. This erosion is further assisted, and, indeed, perhaps is primarily produced by the imperfect obturation or sealing by the copper rifling band of the space between the projectile and the walls of the gun. The gases, under the enormous pressure, quickly find out the very smallest way of escape past the base of the shell, and they stream at an enormous velocity and still at a white heat, through any such slight opening, and melt the hard steel of the gun just as a stream of steam or hot water would cut its way through a block of ice.

It must not be supposed, however, that all modern guns, after firing 176 rounds, would be in the parlous state of the gun from



which the specimen shown in our engraving was taken. This gun was an English piece, and it is well known that the English artillerists have had great trouble from erosion because of the quality of powder which they use. This powder is known as cordite, and the erosion is the price which the English pay for certain desirable qualities which are absent from other powders that do not cause so much erosion. Cordite consists of 58 parts of nitroglycerine, 37 parts gun-cotton, and 5 parts vaseline, and it is the large amount of nitroglycerine that is responsible for the serious eroding effects mentioned above. Bulk for bulk, the English powder is much more powerful than the United States Navy powder; and according to Admiral O'Neil, the late Chief of Ordnance, it requires only about half the weight of the charge for a given gun as compared with the nitrocellulose powder used in our own guns; consequently, there is a great reduction in the weight of ammunition, and a given number of charges will make a proportionately smaller draft upon the displacement of a vessel, while the individual charges are easier to handle at the guns. On the other hand, with the nitrocellulose powder, the life of the guns is very much longer. Indeed, the erosion trouble has been practically eliminated from the guns of our own navy. The English, however, consider that in view of the advantages of lightness and compactness, it pays in the long run to use a high nitroglycerine powder, and reline guns when they become sufficiently eroded to impair their accuracy. They claim that the operation of relining, as practiced in their gun factories, is not such a difficult or tedious operation as might be supposed.

We must confess to feeling a strong prejudice against the use of a powder that commences to destroy the gun from the very commencement of its active service. On the other hand, the Japanese are using the English type of ordnance, and although they have developed a new powder of their own at their home factories, we believe that it is a high-temperature powder of the same general character as the English cordite. The present war should serve to give some very valuable data on this most important subject.

AMBULANCE DOGS IN WARFARE.

(The Lancet.)

SOME interesting experiments were tried upon Wimbledon Common recently with dogs trained by Major Hautdeville Richardson for ambulance purposes. The idea of using dogs for this purpose takes its origin from the dogs trained by the monks of St. Bernard for finding bodies lost in the snow. The St. Bernard breed of dog is, however, too large and not swift enough for use in war and the same remark applies to bloodhounds. These dogs, moreover, hunt by smell, whereas the sheep dog or collie is said to hunt by intelligence or with its brains and not by smell, the cross bred dog showing even greater intelligence in this respect than the thoroughbred. The use of dogs for war purposes has been tried by the German Army, and some 200 dogs formed part of the Herero expedition. Major Richardson has sent some trained dogs to Russia for use in the present war, and these are said to have given satisfaction, and Italy, Austria and Switzerland are also trying the experiment which may be said to be still *sub judice*. The experi-

ments which took place recently were intended to demonstrate the use of dogs in locating the wounded in the open and under cover, neither of which they did unassisted, and in carrying succor to the wounded when found, in the shape of bandages and brandy. For the purpose of the experiment only two dogs were employed, the one a cross between a collie and an Eskimo and the other a cross between a retriever and a collie, the former being if anything the better of the two at its work. Each dog was provided with a water-proof canvas saddle with the Red Cross painted upon each side, which contained eight bandages for the wounded, a wooden barrel of brandy was suspended below the neck, a small water-proof sheet was attached to the neck of the animal as was a bell for night use. With regard to the experiments, their success on Wimbledon Common was only partial. Many of the "wounded" lying in the open were plainly visible to the onlookers, and yet the dogs, after being released from the leash with the order, "Seek wounded," went gaily barking past the wounded in their glad release, while in finding persons located under cover they had to be assisted by Major Richardson. The verdict of those present at these experiments was that the result was anything but conclusive. It must in justice to Major Richardson and his dogs be said that they had traveled over night from Scotland and might naturally be tired and not so keen as otherwise they might have been; but the question naturally arises: What practical value to ambulance work will dogs be even if the system is properly and more efficiently developed? That dogs with the aid of hospital orderlies would be of assistance in locating stricken people on distant parts of a battlefield is perfectly true, but that a dog unaccompanied would discriminate between one actually dead and those in need of relief is quite another thing. Again those in need of relief are generally beyond the power of helping themselves to the relief which the dog might bring them, and to those who are not injured so seriously as to be unable to help themselves, the bandages would be of no more use than those already supplied in the anti-septic first-aid dressing to be found sewn in the skirt of every soldier's tunic when proceeding to the front. This, as we know, in South Africa, largely helped to the keeping clean and quick healing of wounds by its immediate application by the wounded soldier himself. The brandy carried by the ambulance dog would certainly be at the disposal of the wounded, but it is questionable whether it would be beneficial to him or not, especially if his wound was attended with hemorrhage. As water carriers or as bearers of ammunition dogs might certainly prove of use. Dogs, as is very well known, will attach themselves to regiments and would undoubtedly either by instinct or smell go to men belonging to that regiment and thus carry them assistance. Whether they recognize uniform or are guided by smell or intelligence, or both, it is impossible to say. Smell has probably most to do with the power of a dog to locate the wounded. The giant of story said:

"I smell the blood of an Englishman,
Be he alive or be he dead"—

but we are not told that he could further decide whether our countryman was still with us or was gone before. The ambulance dog would be in the same plight. The power of discriminating between the live and the dead would be impossible and the ambulance dog

is quite as likely to remain by the side of the dead man as by the side of the living. By the smell of blood is not meant the smell of actual blood, for in the case of a wounded man this might or might not be present. But the smell of an Englishman is probably as perfectly clear to a dog's keen sense of smell as the smell of a Kaffir is equally distinct to us. It is very probable that the benefit to be derived from ambulance dogs in warfare is not worth the expense of \$125 per dog which is said to be the commercial value of one of these trained dogs, and we think that the British War Office for the present is quite right in awaiting further evidence of their usefulness

EQUINE INTELLIGENCE.

AS a sort of comment on "the superstructure which the creature builds for himself out of its individual experience," let us glance at the following, taken from a paper by Major Hughes-Onslow in *The Badminton Magazine* (London).

Let us consider what has been the effect of man's training on the intelligence of the horse. In most cases, certainly with well-bred horses, we have not tried to improve it; rather, on the contrary, we have tried to make the horse obey us in every way, to depend upon us for everything, and never to think for himself. When at work he is never loose, and when not at work he is shut up in a stable. As far as I know, the only classes of horses that have been trained to work loose are the railway shunting horses and some farm horses, and certainly many of these show a good deal of intelligence in their work.

I should certainly say that memory is the horse's strongest mental attribute. Horses never seem to forget a place they have been to, and if one has been frightened by anything behind a hedge as he is going along the road, he will remember the place to the end of his life. I am sure also that they have a very good memory for people and other horses. Our system of horse management tends to improve their memory, for we keep them shut up on an average for at least twenty of the twenty-four hours, during which period they have very little to do except to think over what they saw in the short time they were out. I take it that if we lived the same sort of life we should not forget many of the places we had visited.

The extraordinary thing is how fond horses are of their stables; the one idea of most of them on being taken out is to get back again as soon as possible. How different is this from the behavior of kennel dogs, who go half mad with joy on being let out and are miserable when the time comes for them to be shut up again; and it is not that horses take no interest in what is going on round them, for if a horse be loose in a box with a half door he will spend most of his time looking over it.

But it is in their absolute lack of common sense that their want of intelligence is most plainly shown. Ninety-nine horses out of a hundred lose their heads directly they are in trouble. If they can they dash madly off, quite regardless of what may be in their way, and come to awful grief over area railings, quarry pits, and such like obstacles, which they could by no possibility hope to get over in safety; their conduct is absolutely suicidal. Then, again, if they are fast in a ditch and cannot run away, they struggle frantically

for two or three minutes, and then give up altogether; they seem to have no idea whatever of intelligently employing their strength to get them out of their difficulty. How stupid most horses are, again, in going through gates and doorways and over bad ground! They look out for their fore feet and shoulders, but leave their quarters and hind legs entirely to chance, and unless the man who is leading them is careful to take them through quite straight, they will not seldom hit the point of their hips such a bang against the door-post as to do themselves serious injury. If you ride a horse at a walk over a little open drain about a foot wide, he will always step over it well enough with his fore legs, but as often as not he will drop one of his hind legs into it; and I have seen several nasty accidents out hunting caused by fidgety horses, who would not stand still at the covert side, or when waiting their turn to go through a gate, getting their hind legs into deep ditches or over the side of field bridges which have no rail or parapet.

It would be interesting if one could form any idea of how much horses are able to tell one another. Of course, in common with all gregarious animals, they have certain signals to express feelings of fear, pleasure and so on, but I sometimes think that they must be able to do rather more and to hold some sort of conversation. If a number of horses are turned out together for any time they always form cliques. Two horses will often be great friends and have nothing to do with the others; generally there will be a ruling spirit who will be master of the rest, but this boss is by no means always the biggest and strongest; in fact, he or she is often one of the smallest of the lot. Sometimes, also there is a very unpopular one that all the others take a delight in hunting and bullying.

MILITARY WIRELESS TELEGRAPHY.

THE report of Major-Gen. Arthur MacArthur on the encampments for field instruction and maneuvers in the Pacific Division of the United States Army, contains much interesting matter regarding the workings of the wireless field-telegraphy, as reported by Major George O. Squier, Signal Corps. Major Squier calls attention to the known difficulty in transmitting electromagnetic waves over land as compared to that over seawater, and says that repeated experiment has shown the importance of good earth connections for both the transmitting and receiving antennae of the wireless telegraphy. For best results it has been observed in general that the vertical wire or net should be carefully insulated from all supporting poles, guys or any electrical conductor connected to the earth, the object being to form an open vertical receiving circuit insulated in the air. "We may therefore," says Major Squier, "with advantage, as Fleming and others have done, regard the general function of the vertical receiving wire and its accessories, as serving to unite electrically the earth and space effects by which, through the agency of one of the forms of wave detectors, a sufficient amount of the energy of the radiating waves is localized to operate a suitable receiving device. It was from a general survey of the above established facts regarding the receiving conditions for successful wireless transmission of intelligence, that the writer was led recently to consider how far these conditions

may be fulfilled by growing vegetation, particularly in the form of high trees covered with green leaves.

"My attention was first attracted by learning from Major-Gen. Arthur MacArthur, United States Army, of a successful experiment made in July, 1904, at the military maneuvers of the Department of the Columbia, at American Lake, Washington, by Lieut. William M. Goodale of the United States Signal Corps, in which he found that in laying rapid telephone lines in a wooded country for the field-exercises of the army, a much better ground could be obtained by attaching the earth side of the instrument to an iron nail driven into the trunk of a tree or shrub, than by the ordinary and more laborious method of burying a conducting plate, or by driving an iron spike into the earth itself.

"At the subsequent joint military maneuvers of the Department of California at Camp Atascadero, California, in August, 1904, opportunity was afforded the writer to test the efficiency of this simple means of earthing telephone and 'buzzer' telegraph circuits in a country where, due to the extremely dry condition of the soil to considerable depths at that season, it was found very difficult, if not impossible, to use the ordinary single wire grounded circuit even when great care was taken in making the 'ground.' By using a tree, however, for a ground connection, a telephone or telegraph station could be established in a few moments, with excellent results.

"It is found that the conductivity of a growing tree in a healthy state, for telephonic currents, is such that the earth contact nail need not be at the root of the tree, but may be carried to a height up the tree of thirty feet or more, and the telephone used from that elevation with satisfactory results. Indeed, experiment shows that good communication can be maintained from one tree top to another with the trunks of both trees in the circuit. When the operator holds the ground wire in the hand, and completes the circuit to earth by merely touching a live twig or leaf, the transmission of speech is good. This permits the military scout to use the vantage point of the tree elevation for observing the enemy, while being screened from view by its foliage, and at the same time, to transmit by telephone to the distant station, the information thus obtained."

Major Squier then goes on to describe his experiments at Fort Mason, San Francisco, a grove of eucalyptus trees on the lawn in front of Major-Gen. MacArthur's quarters being utilized as a receiving station. The experiments were mainly qualitative and the apparatus used of marked simplicity. The electrical contact with the tree was made by driving a nail into the tree itself an inch or two above the earth line, so that the contact would be distinctly with the tree and not with the earth. The whole apparatus used consisted of a few feet of flexible lamp cord, a microphone with three dry cells, and a head telephone receiver mounted on a small board about ten by twelve inches. With the electrical contact at the lowest part of the tree stationary, an upper contact, by means of a nail driven into the tree, was shifted up and down the tree. The transmitting station was unaltered as far as possible, sending the letter S. It was found that as soon as the two contact points on the tree became more than three or four feet apart, faint signals were heard, which in general increased in loudness with the distance apart of the contacts up to the general region where the branches began to diverge, beyond which a further increase could not be noted. Careful experiments also showed that the effects

observed were actually due to electromagnetic waves from the tree itself, and not to the short wire between the two contacts.

The method employed in the experiments had the disadvantage of requiring the results to be interpreted by relative intensities of sound to the human ear, which method is well known to be unreliable in general, as compared with any method involving an instrument, for instance, where deflections may be read by the eye, yet the effects were so pronounced and unmistakable that they were readily confirmed by repeated tests. It was found that the upper contact point could be made either to a metallic nail or pin, driven into the tree trunk, its smaller branches, or by pressing the wire against its leaves, buds or flowers. Since a vertical wire, earthed at its lower extremity, possesses a potential node, and a current anti-node for electromagnetic waves at approximately the point where the wire intersects the earth line, it was thought that a growing tree, which can be regarded as a vertical conducting cylinder, earthed at its lower end through its root system, would possess a more or less well defined potential node region at or near the intersection of the earth line with the trunk or stem of the tree. Experiment confirmed this, and the contact point at the base of the tree was therefore used, in general, as one of the advantageous points of connection throughout the experiments, and comparisons usually made from this point to others, both up and down the tree itself on the one hand, and in exploring the ground surrounding and adjacent to the tree, on the other.

Electromagnetic effects were also observed on the surface of the ground immediately surrounding the tree, and, still leaving the lower contact point in the tree, the surface of the ground was explored horizontally along it, with the other terminal, and from the results Major Squier argues that the effects observed varied because of the unsymmetrical distribution of the root system immediately beneath the surface, which root system readily conducts electromagnetic waves and may be considered as an extension of the antenna into the earth. He also found that when the lower contact point was removed entirely from the tree and the nail inserted in the ground itself immediately adjacent thereto, but not actually touching the tree at all, the signals were heard; thus the effects were received without any actual contact with any form of antenna; but directly from the earth itself immediately surrounding the foot of the antenna and under its electrical influence. In another experiment several trees of a large grove were connected in parallel by joining the upper terminals thereof to one terminal of the microphone, the other terminal of the microphone being to earth. Here, again, slight increases were shown upon cutting in different trees in succession, singly, and in combination. The slight differences noticed were probably due to differences in size and character of the trees, the resultant effect upon the microphone being merely that of the most efficient tree of the number being used at any one time. In conclusion, he says, regarding the use of trees as receivers for wireless telegraphy: "The efficiency of an elevated capacity area attached to an antenna is not wholly dependent upon the extent of such area, but also upon its general configuration, or, in other words, upon its capacity. In like manner, the efficiency of an artificial earth for grounding an antenna does not wholly depend upon the area of the plate buried in the earth, but also upon the shape and disposition of such surface, it having been observed that a given

area of earth plate is more efficient in the form of strips, radiating out from a common point, at the foot of the antenna, than in the form of a single circular plate. It appears possible, therefore, that the manifold and varied forms and shapes given by nature to the leaf surfaces of vegetation, adapt them for absorbing electro-magnetic radition; while the general configuration of the root systems of trees, consisting of large radial root trunks, proceeding out from a common stem and supplemented by innumerable branches and microscopic hair roots and rootlets filled with conducting fluids, is not ill-suited for the conduction of electromagnetic waves into the earth. Again, the strength required in towers and masts for supporting antennæ wires, is provided in the antennæ here suggested, since a great tree with its natural buttresses, and its root system often extending deep into the earth, is well designed to resist the elements."

THE SYSTEMATIC TRAINING OF THE HORSE.

BY COLONEL A. H. C. PHILLPOTTS, R. A.

(Translated from "Revue d'Artillerie" for Proceedings R. A. Institution).

AMONG those who study questions of equitation there has recently been much discussion of certain methods which have given rapid and brilliant results in the hands of a large number of officers.

The methods referred to, being easily applied and easily experimented upon, we think it might be useful to explain them here so that all readers of the *Revue d'Artillerie* may have the advantage of being able to study them.

Captain C—— of the artillery it appears, noticed that there is often an objectionable tendency in a bit when applied to cause a horse to rein back.

In considering how to counteract this objectionable tendency he found that the only plan was to bring pressure to bear on the neck and shoulders of the animal by means of his hands.

About the year 1898 he became so convinced of the soundness of his theories that he laid down this formula: "In all paces of the horse, the effect of the action of the bridle on the horse's mouth, however strong it may be, is transferred to the hind quarters as soon as the horse is no longer in equilibrio." In order to replace the pressure of the hand, he invented a lungeing rein made to rest on the highest part of the nape of the neck, then to pass through the rings of the bit.

Among many unsympathetic people, he at last found one Captain de C—— of the cavalry who entered into his schemes with interest.

These two officers together applied the principles and methods to a considerable number of different sorts of horses. Troop horses, manège horses, hunters, race-horses. The quick and satisfactory results they obtained convinced them of the efficacy of the new method.

In this paper it is not proposed to include the examination of every possible combination and expedient which, having once seen and

understood the principle, it is possible to devise. Only three typical arrangements will be explained.

The necessity for some method of rapidly and efficiently training horses on which to instruct the cavalry soldiers of the French Army who serve only two years, is at once apparent. A rapid method of training the troop horses is much required so as to produce quiet, perfectly trained animals in place of those one often sees in the ranks. Hard-mouthed, fidgety animals, throwing their heads about, most discouraging mounts even to the keenest of volunteers.

With properly trained horses, the cavalry soldier is able to get through the hardest work demanded of him with comfort to himself and ease to his horse. It is now more than ever necessary to have cavalry quick, handy, and not easily deranged when moving at a rapid pace.

Will the application of these new principles permit of a solution of all the difficulties we now have and will it at the same time reduce the number of accidents at present only too numerous during the period of training the recruit?

Even supposing the results obtained, may not at once solve the questions categorically, they are nevertheless most encouraging.

DESCRIPTION OF THE GEAR.

I.—CAPTAIN C.—'S LUNGEING REIN (1898).

The adjustment of the lungeing rope on its bits and its arrangement on the neck are shown in Fig. I:

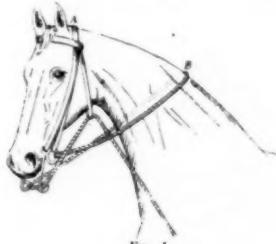


FIG. I.

By the sketch it is seen how the rope can be adjusted to every possible combination of bits.

The rope can pass through one or two rings of the snaffle, or through one ring of the snaffle and one of the bit and so on. And these combinations may be both on the right side and on the left. We also see that pressure on the forehand is exercised partly at "A" and partly at "B." The position of the rope at "B" can be altered as desired and according to the temper of the horse. The pressure of "A" being due to the rope being brought through the throat lash.

The sketch does not show the arrangements which may be made for facilitating the easy working of the rope. There may with advantage be a ring on the throat strap and additional larger rings on the rings of the bits for the rope to pass through easily. The lunge is made of an ordinary hemp rope about 1 cm. (.394 of an inch) in

diameter. The part which goes over the neck might be made of india-rubber. Any other details in the manufacture and materials can be varied at a cording to fancy.

The horse, first of all unmounted, is put on the circle with the apparatus on, which seems almost at once without the use of any force to induce the horse to submission.

The exercise on this lunge gives the animal to understand that he is being mastered, and teaches him the use of the bit at all paces. Circling a horse is at all times an excellent gymnastic exercise, but in this case, it becomes specially efficacious because the horse is properly placed and is made to extend himself while being kept at the same time under control of the instructor who should, if necessary, be supplied with a long whip.

The horse may be exercised on the lunge with an assistant up.

II.—SYSTEM OF REINS INVENTED BY CAPTAIN DE C—— (1900).

Captain de C——, having been accustomed to give a trial to every sort of scheme of equitation was able to extend his researches further than Captain C——.

He was consequently able to discover a method which permitted him rapidly to reduce the difficulties experienced with a horse when mounted, without using the lunge at all, unless this were specially necessary.

Among a large number of apparatus acting on the forehand and on the nape of the neck, the arrangement devised by Captain de C—— in 1900 seems the simplest which could be employed in the army.

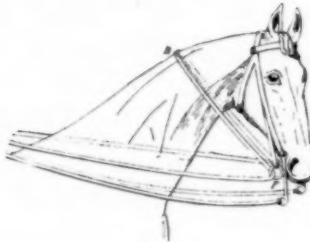


FIG. II.

As is seen in the sketch, Fig. 2, the arrangement consists in passing the center of the rein unbuckled over the horse's neck and then bringing the free ends through the rings of the snaffle on their respective sides and back into the hands of the rider where they are buckled together.

The point "B" where the rein rests on the horse's neck may be varied according to the horse and the object it is desired to attain. The rider can move it about at will. If the horse is inclined to get out of hand, the rein is placed toward the middle of the neck. If the horse tucks in his head, the rein is placed toward the poll and becomes a kind of bearing rein. Ordinarily the rein assumes a position something like this latter. This arrangement of reins is very powerful and enables the rider to place his horse's head as he wishes. Pressure

on the reins, instead of suddenly checking a pulling horse, stops him gradually. Then again, relaxing the grip of the reins permits the extension of the neck of which the rider can take advantage.

Captain de C——'s experience extended over a large number of animals.

In all cases of horses resisting training by rearing, plunging, kicking, rushing in the ranks, etc., he was invariably successful.

Even in the hands of inexperienced horsemen no difficulty was found.

It should be noted that this riding, running rein, equally with the lungeing rein, lends itself to every sort of combination of mouth-piece and every variety of make of material.

In some regiments this system has been adopted for the training of remounts. It certainly appears to deserve a good trial.

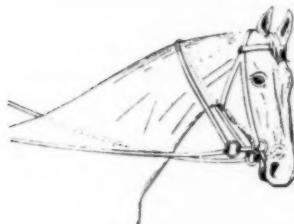
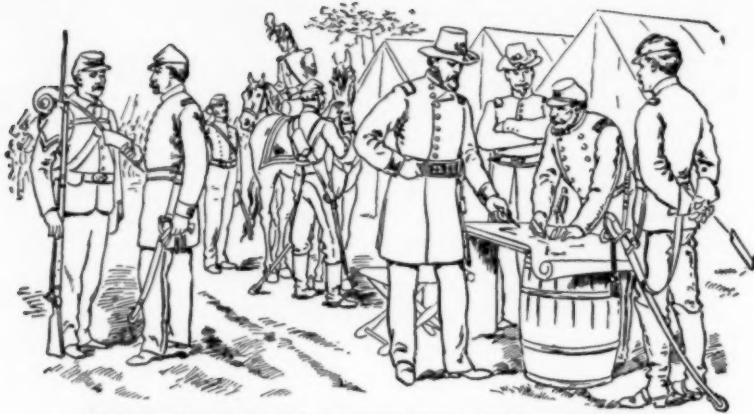


FIG. III.



Comment and Criticism.

"The Military Service Institution."

Journal U. S. Cavalry Association.

The Editor of the *JOURNAL OF THE MILITARY SERVICE INSTITUTION* is to be thanked for the General Index which he has just issued, and he and his able assistant, Capt. Thomas A. Roberts, Seventh Cavalry, are to be congratulated upon the excellence of their work. Too much praise cannot be bestowed. It was a large undertaking. The form of the work, its style, its convenient arrangement, its scope, the soft dead white of its pages and the clear black print of its type, all appeal to one.

In glancing through this index, one who has not kept steady pace with the progress of the Military Service Institution, is struck with the array of professional subjects that have been discussed in the pages of its Journal, and one has but to look over the index of authors (Captain Roberts' part of the task) to be convinced that most of the subjects have been ably treated, for in that list we find the names of most of the officers of our service—not all of them by any means—that have distinguished themselves as writers or otherwise since the Civil War.

And in looking over this index one cannot but be reminded, if one needs to be reminded, of the vast good the Military Service Institution has done for our service. When, on that day in 1877, General Stanley, General Fry, General Rodenbough and Colonel Lieber, issued the circular upon which the Institution was founded, they laid the corner-stone upon which has been builded all the professional culture existent among us to-day. And there is professional culture in our army, more and of a higher grade, taking it as a whole,

than there is in any other army in the world. And there ought to be. And it dates back to the founding of the Military Service Institution. All the other agents of our culture have followed in natural order, the Service School at Fort Leavenworth, the Cavalry, Infantry and Artillery Associations, each with its journal, the Lyceum, the examinations for promotion, etc.

But the professional culture of our officers has not been the only aim or the only achievement of the Military Service Institution; its field has been even broader; its purpose has been the general improvement of the military service of the Nation, not alone of the Regular Army but of the National Guard also. Scarcely a reform, scarcely a change for the better, has been wrought in the service within the last quarter century, but has been first suggested in the pages of its Journal.

Few of these changes have originated at the War Department, but, thanks to those in authority there, they have been read of it the pages of the *JOURNAL OF THE MILITARY SERVICE INSTITUTION* and put into effect. And through the War Department the influence of this Institution has reached the halls of Congress.

The Institution and its Journal are a quarter of a century old this year. Long may they live, and ever wax stronger in influence and numbers—the Institution in the number of its members and the journal in the number of its readers and contributors.

Every officer of the army ought to be a member of the Military Service Institution.

"Military Hygiene."

Brigadier-General A. A. Woodhull, U. S. A.

On October 2, 1862, General Lee wrote to Mr. Davis: "Strange to say, our sick are very numerous, * * *" and adds, what is and always has been the key to the whole matter: "Until the regimental officers can be made to appreciate the necessity of taking care of their men, keeping them under control, attending to their wants and comforts, and enforcing cleanliness, etc., I fear the sanitary condition of the army will not improve. It is the want of this attention and provision for comfort that causes our men so soon to break down under hardship."

Few recognize that in a body of men of military age, properly selected at enlistment, practically all disease is preventable. But it is true, and what may not a brave army intelligently officered accomplish if only its health is maintained. To care for troops so that they may remain efficient is the mission of military hygiene; and the immediate agents who should be charged with its execution are the officers of the line in co-operation with the medical staff. Such

knowledge is no part of their inner consciousness, and it is reached by a royal road no more readily than is any other learning. The natural leaders and instructors in this province of military efficiency are the medical officers. Not mere doctors, skilled in the cure of the ill and the care of the wounded, but officers whose theoretical study has been conditioned and developed by association with troops. It is a weakness of newly-raised regiments, speaking generally, that all their officers, medical as well as line, lack that special experience through which theory becomes practice. For a long time the average volunteer resents an officer's care. The common theory of the non-regular, although not formulated in words, is that the officer's particular province is to announce certain orders, so that appropriate evolutions may follow in due course; that he is a kind of animated and mobile phonograph, chiefly available for drill purposes, which often is the officer's own view as well, if indeed he does not look upon any other procedure as beneath his dignity. In reality the officer should supervise the soldier's going out and his coming in, his rising up and his lying down, his hair and his feet; he should know that he has neither chafes nor blisters, that the water he drinks is pure or is boiled, that he properly cooks his food, that his camp is drained and its refuse disposed of, and that, unlike good Episcopalians, he does those things that he ought to do and leaves undone those things that he ought not to do. Unless soldiers are thus carefully supervised until they reach the automatic stage, it will be found, as General Lee learned to his sorrow, that there is no health in them.

But volunteers are not the only sufferers through their own and their superiors' ignorance. A good commanding officer must be self-reliant; but that is not enough. He must have the courage of his convictions, but he should be willing to learn. When molecular change ceases, the body is dead; and when the mind fails to assimilate new ideas, it also is dead. It is really in the condition of Lazarus as described by Martha, an offence to people who are alive. What should be thought of a general who, in the exercise of his prerogative, defiantly drinks from a well against which the troops have been warned as being unwholesome? I did not personally witness this incident, but I believe that it occurred. A few years before the Spanish War, a chief medical officer, with the approval of the department commander, required his juniors to solve certain problems in military sanitation whose factors they might expect to meet in actual operations. As it happened, one of them proved an exact anticipation, on a somewhat smaller scale, of the conditions that materialized at Camp Thomas. Had the men who solved it on paper been clothed with authority, there would have been a different record. A new department commander at once stopped those exercises on the alleged ground of the expense of printing quarterly a couple of dozen copies of the problems. But there was no difficulty in continuing to

print general orders. Neither the army nor the country is ever likely to know the amount of discomfort, disease and death that has been due to inadequate *personnel*, and particularly that has followed inhibition through unintelligent control, which led to sanitary, not clinical, inefficiency. On the other hand, the miracle wrought by appreciative administrative support of efficient sanitation, in the happy interpretation of Walter Reed's scientific discovery, revolutionized the health of two nations and opened new possibilities for the world. How many generals could be depended upon, without this precedent, to authorize an attempted extermination of tropical mosquitoes in the hope of abolishing yellow fever? Notwithstanding this triumph, it remains true that, speaking generally, the authorities still view instruction in sanitation as an incident more than an essential of military efficiency; a permissible addition, like the ornamental bullion upon an otherwise serviceable sword-knot, instead of as a bayonet-clasp which makes the weapon itself more effective.

It is in the vigorous expression of the true doctrine that this essay has its value. Captain Traub starts with the postulate that the practice of military hygiene is essential for general military efficiency, hence it should be taught in common with other military studies. That is exactly true. Now, what are the facts? Besides the Army Medical School, where it holds a place by the very law of its being, it is part of the curriculum at the General Service and Staff College, which is "the only school in the army where it is taught with the dignity the subject demands." But even there failure to be graduated carries as its sole penalty the forfeiture of the right to a diploma. As the essayist suggests, it would be better to drop such an officer incontinently, than later to fill graves with innocent victims of his accumulated ignorance. At garrison schools for junior officers it is meagerly taught, again with no reported retribution for neglect. The special artillery schools are exempt, notwithstanding that arm lives under many of the conditions of sedentary military life; and the engineers also are supposed to have absorbed it by intuition, as a part of their special endowment of universal knowledge.

That the importance of military hygiene is not appreciated by those who have the ultimate authority, is best shown by its position at the Military Academy. The manner in which this subject—one cannot yet call it a study there—came to be introduced at all, and the procedure that debarred its acquiring the position commensurate with its importance, form a curious chapter undesirable to relate at this time. West Point, properly enough, sets the pace; and it has no warmer friends than the medical staff, who recognize its defects as well as its great merits. When it became necessary to recognize that there is such a science, what happened and what happens now? The senior medical officer is required to lecture to the second class about twenty times. The class has no duty beyond that of an

occasional unmarked recitation. No notes are required to be taken, no examination is held, no standing can be acquired. The service, excepting so far as the late lecturer is concerned, is purely perfunctory. The cadets may be said to acquire a bowing acquaintance with the subject and nothing more. They do not necessarily learn anything (every other subject is required to be studied), and in an institution where every incident, from deportment to examination, has a fixed value for itself and a relative value toward everything else, this has none at all. It is most effectually damned with faint praise. Can one expect the graduate to respect it, before, by active service, he learns that it is not all of life to live? By that time he will have forgotten the most of what he heard in those spring afternoons, and he may or may not make it up.

Military hygiene should be a distinct course of study for the first class, the men who are about to serve with troops; and it should have a fixed and real value proportionate to its practical importance. The instructor, or professor, should be selected for that duty and should have adequate local rank while the detail runs. It would be just neither to the officer nor to the cadets to impose that service upon the senior medical officer present, who may have been assigned there for very different duty than that of teaching; for to instruct such a body of young men requires special qualifications. The inborn feeling of the Academic Board is that no one but a graduate understands West Point. That is the natural offspring of *esprit* and conservatism. Conservatism is all very well, but if it be true that a cadet has used his father's text-book and found his successive lessons to be precisely those that were marked out day by day for his father's study thirty years before, it may be that conservatism has become stagnation. At all events an intelligent medical officer, with a trained mind and familiar by recent service with the requirements of the troops on whose account the Academy exists, may safely be trusted not to overthrow the institution. Would it really do harm were such an angel occasionally to trouble that pool of healing, so that its virtue might become more active? Work enough can readily be found for a competent instructor, so that the detail should not degenerate into a sinecure. The canonical objection would be made that there is no time, that the course is fixed. Disjoin the parts and reassemble them. Make a new schedule. If any institution cannot teach the subjects that belong to its province, something is wrong. There was a five years' course in the late fifties; why should not history so far repeat itself? Any civil college that did not keep abreast of the literature and science of the day would soon cease to exist.

This comment has already passed the ordinary bounds, and other features of this interesting paper must be left to silence. That Captain Traub, already a Gold Medalist of the Institution, has won this

practical Seaman Prize should be a matter of sincere congratulation; but that a graduate should so clearly see and so plainly point out the necessities of the case, is an omen of the brightest augury.

PRINCETON, N. J.
January 28, 1905.

Major D. H. Broughton, 11th Cavalry.

Timely, possessing a high order of literary merit, and well deserving the honorable distinction of having won the Seaman Prize, Captain Traub's Essay on Military Hygiene should command the respectful attention of all who have the welfare and efficiency of our army at heart.

It seems strange that in this enlightened age it should be necessary to argue for a better understanding of so important a subject. Yet such is the case. But a most remarkable feature is encountered in the fact that the argument meets with little verbal opposition. Everybody is willing to admit that military sanitation and hygiene, *the care of troops*, should be as perfect as possible. No one will deny that if troops are not in proper condition, campaigns may be lost and the best laid plans of general and staff come to naught. But here the matter stops. We recognize the evil but are not yet ready to apply the remedy.

The study of hygiene is not a new thing. From the earliest times men have sought to discover means of prolonging life, panaceas to cure all ills, "fountains of perpetual youth," and in the search they have gradually come to realize that right living, whatever that may be, will add to a man's years. And the laws of right living are summed up in the word *hygiene*. Yes, people will admit without argument the necessity of observing hygienic rules, but the masses make little effort to follow them, and herein is the difficulty. They bow to the weight of reason, but still are skeptical. They must be taught, and, unfortunately, experience in the form of plagues, disease and death seems to be the only really efficient teacher.

In the Philippine Islands to many of the ignorant barrio people cholera is a big black dog with evil attributes wandering through the country. When he stops in front of a house someone will be sick therein. Teaching hygienic laws to such people without a big stick, telling them that the black dog is really a microscopic parasite whose wanderings may be controlled, is of little avail. And so with others more enlightened. Doctors prescribe, but lacking faith, we throw the medicine out of the window. Moreover, observing hygienic laws involves trouble and cost. It is easier to trust to luck; easier to drink water direct from the faucet than to

boil it. We do not yet fully realize the paramount importance of this subject. Must it be brought home to us through the experiences of another war? Is another Santiago campaign necessary?

In time of war it is our policy to depend upon our citizen soldiery, upon the National Guard and volunteers, and unless they, especially the officers, understand *the care of troops*, which they must learn in time of peace, during the period of preparation, history will again repeat itself. There will be more typhoid-fever camps, more Montauk Points, and the people will again stand aghast and angry, though in a measure at fault themselves, for the advice of all the doctors in the world cannot make an army take proper care of itself if the men do not willingly and intelligently lend their assistance. Our soldiers do not realize the necessity of taking precautionary measures and therefore disregard them.

During the cholera epidemic in Batangas in 1902, strict orders were given prohibiting the eating or drinking anything obtained from the natives. A hospital attendant was sent to that station and violated the sanitary regulations by eating in a native restaurant. In three days he died of the dread disease. Unfortunately the poor fellow could not profit by his own experience but the other soldiers did and there was little trouble in securing compliance with the regulations after that.

But public opinion is slowly changing and the people are coming to believe that medical men know what they are talking about and that there is really something in hygienic laws after all. The following clipping taken from the "Outlook" is an evidence of this trend of the public mind.

PREVENTABLE DISEASES AMONG SOLDIERS.

"From the standpoint of a humanitarian and a lover of his kind, it was to me a positive delight to visit that great series of hospitals from Tokyo to Sasebo, with their long wards filled to overflowing with wounded, suffering soldiers, the legitimate victims of war, their faces full of health and hope, despite their fearful wounds in the long, hard campaign of five or six months in Manchuria, their chief desire to know how soon they could join their comrades, and to contrast them, in memory, with the vivid picture of the poor, wan, emaciated and almost helpless that crowded the wards of our hospitals in Cuba and Porto Rico, in Tampa, Chattanooga and Camp Alger and Montauk Point, in 1898, and in the Philippines in 1899-1900—the innocent, unwounded, and illegitimate victims of another conflict which, in comparison with the one now waging, would be considered no more than a skirmish among outposts.

"If wars are inevitable, and the slaughter of men must go on (and I firmly believe that wars are inevitable, and that most of them are ultimately beneficial), then let our men be killed legitimately, on the field, fighting for the stake at issue, not dropped by the wayside through preventable diseases, as they were in the Spanish-American War—fourteen hundred for every one that died

in action. It is for the fourteen hundred poor fellows who are sacrificed, never for the one hundred who fall gallantly fighting, that I offer my prayer."

But in the regular service we have little excuse for a poor understanding of military hygiene or for a careless and indifferent enforcement of its principles. True, the majority of our soldiers enter the service with little knowledge of, or regard for, these principles, but they are under the police power of military discipline and can soon be made to conform thereto. The enforcement of discipline is the legitimate sphere of line officers. Medical officers may advise as to *the care of troops* but the actual responsibility therefor falls upon the officers of the line. How can they discharge so important a duty unless they understand it? An officer's value to the service should be measured not only by his ability but by the manner in which he does his duty. The question, then, of the care of troops resolves itself into one of a proper education of the officers of the line and an efficient enforcement through them of the requirements of military hygiene.

Naturally officers will devote more time to that part of their profession which seems to receive the greater approbation from those placed over them. If the War Department apparently attaches little importance to the subject of military hygiene, to "the care of troops," it will receive little attention from the officers and men. If our military schools scarcely touch upon the subject the natural inference will be that it is of little importance. It is taught at the Military Academy in the form of lectures, but no weight is attached to the subject. Every graduate knows how little attention is given by cadets to anything not bearing upon their graduating standing.

A few years ago the course at the Academy included a department of geography, history and ethics. Ethics was taught in the form of lectures to the fourth class. Each cadet was urged "to make of himself the very best man he was capable of becoming," but no graduating value was attached to this doctrine. The instruction in ethics was regarded as a joke.

Military hygiene, better termed *the care of troops*, should be taught and given a value at West Point. It should have a place in the curriculum of our service schools having to do with the line of the army. But especial prominence should be given it in the garrison schools. There the officer has an opportunity of observing and practicing what he learns, and it should be placed in the very first year of that course instead of in the last.

In the army, military hygiene has been considered as pertaining particularly to the domain of the Medical Department, and so in a measure it does, for that department must watch over the health of the army, but its duty in this respect, as Captain Traub points out, is advisory only. Medical officers take the man when he enters

the hospital, while line officers are responsible for him at other times. For this reason I would suggest that the term "Care of Troops" be substituted for "Military Hygiene" or used in connection therewith. Any officer can see that it is his duty to take care of the troops under him, while the term military hygiene is more or less in the clouds, and as "the care of troops" is particularly in their province, line officers, under supervision of competent medical officers, should be made instructors of this subject in our military schools. This will tend to a better understanding of the subject and add to its apparent value.

It will not be difficult to institute a study of military hygiene in the army, but even then its principles will not be rigorously enforced unless our superior military commanders take an active interest in the matter. Company commanders in their companies, post commanders in their posts, and inspectors everywhere. The War Department itself should take the initiative by including "the care of troops" in the list of subjects upon which officers of the higher grades are examined for promotion, and not confine it to second lieutenants.

As a matter of interest and to show how very necessary it is for the very head of the army to take the initiative in questions of this character, and to show also that junior officers cannot always be held responsible for unsatisfactory conditions, the following letter from the War of the Rebellion Records * is quoted:

SURGEON-GENERAL'S OFFICE,
September 7, 1862.

"HON. EDWIN M. STANTON,
Secretary of War:

SIR:—I have the honor to invite your attention to the frightful state of disorder existing in the arrangement for removing the wounded from the field of battle. The scarcity of ambulances, the want of organization, the drunkenness and incompetency of the drivers, the total absence of ambulance attendants, are now working their legitimate results—results which I feel I have no right to keep from the knowledge of the Department. The whole system should be under charge of the Medical Department. An ambulance corps should be organized and set in instant operation. I have already laid before you a plan for such an organization, which I think covers the whole ground, but which I am sorry to find does not meet with the approval of the General-in-Chief. I am not wedded to it. I only ask that some system may be adopted by which the removal of the sick from the field of battle may be speedily accomplished, and the suffering to which they are now subjected be in the future as far as possible avoided.

"Up to this date 600 wounded still remain on the battle-field in consequence of an insufficiency of ambulances and the want of a proper system for regulating their removal in the Army of Virginia. Many have died of starvation; many more will die in consequence

*Series III, Vol. II, p. 525.

of exhaustion, and all have endured torments which might have been avoided. I ask, Sir, that you will give me your aid in this matter; that you will interpose to prevent a recurrence of such consequences as have followed the recent battle, consequences which will inevitably ensue on the next important engagement if nothing is done to obviate them.

I am, Sir, very respectfully, your obedient servant,

WILLIAM A. HAMMOND,
Surgeon-General."

If I may be permitted I shall take this opportunity of making a suggestion which conditions seem to warrant and possibly demand.

We have in use to-day a valuable little book on Military Hygiene but it sells for \$1.50 when it should cost not more than 50 or 75 cents. Extortion is odious in any form. Let a competent board be convened to compile or prepare a manual on military hygiene, or "the care of troops," of convenient size and containing such fundamental and necessary principles as line officers should know, and also including instructions in first aid. This book should then be issued or sold to the army and National Guard at cost.

"Combined Maneuvers."

Colonel Jacob A. Augur, Tenth Cavalry.

We shall start our premises with the assertion that combined maneuvers are essentially necessary if we expect to be prepared for actual war; not to wait until the actual breaking out of hostilities to put into practice something we should have had before, some experience, at least, in the movements of large bodies of troops to the rendezvous, and practical experience of troops in the field of combined maneuvers. This is absolutely essential for everyone, officers and enlisted men of the regular service, and more particularly in the case of the National Guard of the country who receive little, if any, instruction in this most important duty, as nearly as can be simulated to war conditions.

This, I believe, is the consensus of opinion of all officers, both regular and of the National Guard. Colonel Wagner's article on combined maneuvers is a most timely contribution, for it is a most thorough and exhaustive treatise on the subject, and shows to what extent maneuvers in our country have been carried on. Its history is of recent date; the maneuver camps but six, and just as there seemed a prospect of its being firmly settled, that this system of a yearly meet, so to speak, had come to stay, we are met with the cry "too much expense," and for this year there will be no camp of maneuver.

It seems useless to try to convince the layman how necessary it is for the welfare of the country and for the country's army, when

to a military man it is self-evident that such varied instruction as these maneuvers afford to all, is of vital importance to us as a nation, if we are ever to lay claim to being in a state of readiness when the war call sounds. Because these arguments are sound, it does seem that a spirit should inspire others who have the power to institute the maneuver camps, to respond and declare its importance, so that every year will see combined maneuvers in some section of our country. With us it is a new departure, and the results have shown the wisdom and value of them. "'Tis a pity 'tis true" that our aims and hopes are to be snuffed out, and extinguished on the score of expense.

In all maneuvers there should be two distinct camps, separated by a reasonable distance, in preference to one single camp. I am thoroughly in accord with all of Colonel Wagner's remarks as to ~~u~~mpires. At the maneuvers at Manassas, the umpires were insufficient in that wooded terrain; battalions being separated or sent off on detached duty were not seen again during the action by the umpire of that regiment, and no account could be rendered of their doings. Each battalion should have its own umpire. This requirement would necessitate the detail of a good many officers, but you get better and more satisfactory results. It is essential that all umpires should meet at the central camp; and for the good of all, the day's action should be discussed, for it is of the greatest benefit to all concerned, which is the main reason for having the maneuvers. I am in thorough accord with him in his remarks as to which side is the victor.

It has been remarked by the press and individuals that at Manassas the work was too hard and too strenuous for the National Guard. There is no doubt the four days' continuous work was a severe task and strain, yet the benefit the officers and men received fully repaid them for these strenuous days. Officers will never again permit their men to go hungry; the men will never appear in any but serviceable and suitable walking shoes.

In order that the National Guard may be better prepared to start on a more equal footing with the regular troops and not delay the maneuvers with preliminary work, there should be a regular system instituted by all the State troops, to devote most of their time, while in their camps of instruction, to learning what is most essential for practical work, viz.: open order formation for attack; patrolling; security and information; how troops should march and camp, how to hustle for themselves and not be so dependent, and to be imbued with the fact that because you go to camp and live in a tent, that it is not a lark and a frolic, but means *work, work, hard work*.

If the above instructions were given in place of precision of drill in manual and close order, there would be a vast change for the good, and the National Guard would arrive at the maneuver camp far

better prepared, and would leave, feeling that their service there had left them the satisfaction of having been of inestimable value, and that, when the occasion arose, they would feel. We all are ready, and do not have to learn our A B Cs. In fact, make them confident of themselves, which is the degree of perfection we are striving for in these combined maneuvers.

May they annually be permitted; and with economy, coupled with judicious management, the expense can be minimized, and not be considered an extravagance. The results obtained are well worthy the outlay, and it is hoped that Colonel Wagner's article will impress itself forcibly upon public opinion to the extent of its seeing the need of this important military duty being furthered in every possible way.

Major W. E. Birkhimer, Artillery Corps.

The object that it was hoped would be attained by the Militia Act of January 21, 1903, was the successful co-operation in exercises on the practice field of regular troops and the organized militia. The former will be benefited in the facilities thus afforded for maneuvering upon a more extended scale, both as to country and numbers, than ordinarily is the case; while the militia are not only benefited in a similar manner, but also by being associated with those who are versed in the minutia of field-service incidents, such as camping, sanitation, the economical and proper use of the ration, and many other matters of primary importance for the soldier and the successful commander to know.

No experienced officer or soldier will gainsay the fact that there is opened out here a field for useful exercises for all concerned.

There is, however, the very vital matter of how joint-maneuvers of the character mentioned best may be utilized to accomplish greatest good. Here is room for exercise of sound judgment, and, as is to be expected, opinions are found to differ.

A fact of first importance in this connection is that the time that the organized militia can devote to such joint-maneuvers is necessarily limited, and ever will be so. The *personnel* are business men who largely devote their season of recreation to these field exercises; but two weeks is about the most that any thus can get away from their private affairs, this time running down to one week in many cases, with resulting limitations upon the time that actually can be spared upon the tented field; and the latter time is that only which really counts for much in the sum-total of joint-maneuver benefits, although experience in transportation, entraining and detraining of troops is not undervalued.

One result is that the militia cannot be carried by railroad or steamer very far, as every hour thus occupied reduces materially

the time that can be passed in the really vital part of the exercises, namely, the working out of problems in the joint-maneuvers. It follows as a corollary from proposition, that, unless facilities for concentration of troops are extraordinarily good, the assemblage of organized militia will have to be effected somewhere in their States or the immediate vicinity. The transporting them long distances consumes too much valuable time, that cannot be spared for such purpose. It follows, further, that, as a rule, relatively small numbers of organized militia can with greatest advantage be assembled at any one place, making the entire number of troops on the ground, regulars and militia united, not more than ten nor less than five thousand. Nor is this the disadvantage that it might seem, as restricting the scope of the maneuvers. On the contrary, one of the experienced and observant general officers who commanded at these exercises last year expressed the belief that, in the light of what was learned there, it is much better to have a small number for a longer, rather than a larger number of troops for a shorter, time; this, contrary to previous ideas. Time spent on the maneuver ground is the vital matter.

Other propositions flow from this fundamental one.

This time should be utilized to best advantage. Here is the rub. What is to best advantage? Here is where opinions differ. Some of the militia would spend it largely in barrack-yard drills, and learning the first elements of extended order exercise. Other commanders would suspend exercises at 3 P. M., march the troops back to their camps, reoccupying as nearly as may be the 3 P. M. positions of the day before the next morning; thus marching and twice counter-marching on the same ground. The objection to the former proposition is that it uses up time that should be devoted to the higher branches of the soldier's art in doing things elementary in nature and that can and should be learned at home. The objection to the latter is that troops are unnecessarily fatigued, considering the work ultimately accomplished, and time consumed in marchings back and forth on the same ground, instead of having, as wholly impracticable, the troops move out equipped for their work, to camp, if necessary, where night overtakes them, as would happen in actual campaign.

Too much should not be attempted at these maneuvers. So much that is of importance for officers and soldiers to learn and then practice, and yet which lies wholly within the limits of the possible of attainment, that the entire maneuvers well may be restricted to these more modest efforts.

The rationing the troops; camping in a sanitary manner and maintaining a sanitary camp; the disposition and handling of the sick, either actual or simulated; the marching of troops in close or extended order; the assuming of various formations incident to cam-

paign; night marching under various conditions, and many other object-lessons, may be set the troops and learned by them in such manner as to be of great value to the practical soldier, whatever his sphere of duty in the field. The sham battle should be rejected. It is only a sham of the flimsiest kind. There is enough that is good to do upon these occasions without such faction fights. It is noticed that at one of the maneuvers the umpire was instructed to announce his decision as to the result of the battle, but the plan appears to have been abandoned as injudicious. The latter decision was in every way wise. To attempt to foist occasions, where blank cartridges only are used, into the category of battles will do for mere stage-play but not for real soldiers. It mocks the supreme moments in human existence. Neither can either generalship or leadership be predicted from affairs alone where only blank cartridges are used. All this is straining after the unattainable on such occasions, and, to this extent, neglecting the less ambitious and more worthy program of confining maneuvers to the movements before enumerated as advantageous, or others of their kind.

In some instances the organized militia complained of the hardships of the marches. On one occasion, according to the record, a commander was promised a battalion at a certain place and yet not 50 per cent. arrived there, the rest falling by the wayside. As an illustration of the requirements of war, this experience was wholly misleading. Yet these troops believe they were called upon to do greater marchings during these maneuvers than they would have even in campaigns. Nothing could have been further from the fact. Without drawing upon the experiences of the Civil War, or of the Philippines, or Cuba in 1898, to prove this, an instance from British experience in South Africa is at hand and to the point. On February 12, 1900, the Seventh Division, starting at 7 A. M., lost many men dead during a march of sixteen miles, prostrated by heat and thirst, twenty-one deaths in the Fifteenth Brigade due to this cause alone. On the 13th of February, 1900, the cavalry and horse-artillery lost many horses on the march, due to heat, the latter alone losing, due to this cause, fifty-nine horses dead.

Of course, one reason for the organized militia falling out when it suits them on the march is the fact that no penalty is attached to the act that appeals to men who will do this in a nearly wanton manner. It appears that the Summary Court, as we practice it in the Regular Army, is not a disciplinary instrumentality to be booked against delinquent militiamen on these occasions; at least their pay from the United States then cannot be so forfeited. Therefore, if it pleases the militiaman to fall out when he wishes, regardless of necessity, there is no really effective disciplinary measure to be enforced against him. However, it doubtless is true that the militia are really unprepared for anything like strenuous work when they

first take the field. This habit of life makes them soft, and, more than that, the shoes they wear are wholly unsuited, as a rule, to hard marching. This softness can be in a measure corrected by taking things easy at first; but the matter of proper shoes cannot be corrected after they arrive on the maneuver ground. They should all learn by experience already had, and the States should afford their troops facilities for getting good marching shoes. When they do this we may expect a great reduction in the number of those who fall out of ranks at the joint-maneuvers, a practice so at variance with true military spirit, and which reflects so upon the whole body of the organized militia.

SAN FRANCISCO, CAL.,

JANUARY 23, 1905.

Lieutenant-Colonel Alfred C. Sharpe, U. S. Army.

Seventeen years ago in an essay published in this Journal, a plan was proposed whereby the national and State troops might be brought together in annual maneuvers.* It was realized that no instruction of this kind could be undertaken by the army without the co-operation of considerable numbers of auxiliaries—that is, National Guard or militia organizations, and to this end it was suggested that a system of State, district and national encampments should be instituted, in which a progressive course of training could be carried forward. The intervening years have given time for further reflection, and some additional opportunity to observe. We have seen the National Guard of many States in many camps in both peace and war; and during the past three years under specially favorable conditions at the maneuvers in Kansas, Kentucky, Ohio, and Virginia. It is fair to presume that the best troops, or at least those who were considered among the best, were selected for war service, or to represent their States at these maneuvers. And yet, it was the consensus of competent opinion in all these camps that very few of these auxiliary troops were prepared to enter with the maximum of profit on the advanced instruction for which the maneuvers were designed. After witnessing the conditions at Chicamauga and the confusion at Tampa, we surely did not need the additional experience of the maneuvers to convince us that in this great school, as in all other lines of instruction, we should establish a progressive course, advance by degrees, and make haste slowly. To allow the States to make their own selections, and send to the camps their best or their worst, as local (and perhaps non-military) influences may determine, will give us year after year the same heterogeneous mixture, and effectually

*Prize Essay, 1887, by First Lieut. A. C. Sharpe U. S. A., *The Organization and Training of a National Reserve for Military Service*.

retard all true progress. The criticism to which Colonel Wagner refers was very justly made "that so far as some of the militia organizations were concerned, it was like placing a lad in a university before he had finished his course of common school studies." It seems quite obvious then, that the most urgent need of the system which we are trying to develop to-day, is a more thorough elementary training. This should begin in the armory, where the individual training of the soldier should be completed, and where he should learn something of guard duty. The next step should be the State camp where battalion, extended order, and possibly regimental drills can be had, where guard duty can be learned, and administration and sanitation given practical demonstration. All organizations participating in the State camp should be allowed to compete for detail at the district camp the following year, and no troops should be permitted to advance to higher courses except through this competition. The inspectors who make these selections should be well qualified officers of the Regular Army. These district camps would resemble in some measure, or be an improvement, rather, upon our present maneuver camps. They should be under the command of army officers, having associated with them the available Federal troops of the district, and should carry forward a course of problems in minor tactics. The strength of these camps would not exceed three or four brigades, the distance to camp would be short, a minimum of time would be wasted in travel, and the cost of transportation would be comparatively small. Having ten or twelve of these camps every year in as many districts would be of far greater and more general benefit than one or two large camps with only one-half of the States of the Union participating. Following the same system of competition in the district camps, a very select corps could be obtained for a national encampment, and this could be made, as Colonel Wagner suggests, of sufficient strength to afford a very excellent school for generals. Whether this national encampment should be held every year or every second year would depend on the state of the appropriations, but, if the National Guard organizations were permitted to compete for the honor of representing their district, and the instruction was carried forward systematically, progressively, judiciously, it is probable that the appropriations would be forthcoming.

I agree very heartily with many of the suggestions advanced by Colonel Wagner, especially with reference to umpires. There is no reason why an umpire should wear the uniform of the side he is with. A plain white suit would do as well, and better. He should be well mounted, provided with an orderly, and should change sides from day to day. The problems should not follow each other so closely as to prevent him from making up at least a brief report, and the camps should not be so large and widely separated as to interfere

with the assembly of the officers to hear the reports and the comments of the chief umpire on each problem. This feature was found impracticable at Bull Run last year, and was a most lamentable defect. It is probable that many officers went home from that campaign without knowing how the plans were executed. With no one to criticise or commend, the same errors might be committed, as Colonel Wagner has said, day after day, and the zealous and efficient receive as little recognition as the ignorant and incapable.

Following is the organization of districts proposed in 1887, based on the Congressional representation and strength of the organized militia at that date. I am more than ever persuaded that some system along these lines must be evolved before we can hope to realize a progressive course of training:

MILITARY DISTRICTS.

No	States and Territories	Congressmen	Organized Militia then in service.
1.	New England States.....	26	11,771
2.	New York.....	34	13,230
3.	Pennsylvania and Delaware.....	29	8,254
4.	New Jersey, Maryland, District of Columbia and Virginia.....	23	10,027
5.	North Carolina, South Carolina, Georgia and Florida.....	28	11,895
6.	Alabama, Mississippi, Louisiana and Texas.....	32	8,206
7.	W. Virginia, Kentucky and Tennessee.....	25	3,762
8.	Ohio and Michigan.....	32	8,638
9.	Illinois and Indiana.....	33	6,334
10.	Iowa, Wisconsin, Minnesota, N. and S. Dakota, Montana, Nebraska and Wyoming.....	31	9,418
11.	Arkansas, Missouri, Kansas, Colorado, New Mexico and Utah.....	29	7,005
12.	Arizona, California, Nevada, Oregon, Washington and Idaho.....	11	7,226

"Cardinal Vices of the American Soldier."

The Army and Navy Journal.

The last number of the *JOURNAL OF THE MILITARY SERVICE INSTITUTION* contained an article with the above title by Maj. Robert L. Bullard, Twenty-eighth Infantry, which will probably excite controversy among officers who have hitherto believed they had a fairly correct idea of the short-comings of the American officer and soldier. Major Bullard names as the "cardinal vices" of our soldiers "a spirit rebellious and insubordinate to authority; excessive and unnecessary wants, wastefulness; a deficient sense of the seriousness and the obligation of the enlistment oath; intemperate criticism of superior

authority, a loose tongue, selfishness, self-seeking, a contempt of humble things and duties."

While the above enumeration perhaps lends itself to disorganized militia commands, and might apply to a negligible percentage of our regular officers and men, we cannot believe that experienced officers in general will agree with the writer that these are the "cardinal vices" of the American soldier. The cases in which we have encountered a "spirit rebellious and insubordinate to authority," can certainly be counted on the fingers of both hands, in an experience of a good many years. Recruits have not only displayed little "resentment under discipline," but have as a rule been the most subdued individuals of the organizations which I have commanded. The American soldier may to a certain extent be wasteful, but it is usually an acquired trait, and develops with lack of proper supervision by his superiors. The soldier is not wasteful of anything which concerns his personal comfort, and it only requires the firm and unyielding will of the immediate commander to discourage wastefulness of public stores. In other words, wastefulness is a trait of character which will develop among any aggregation of individuals in which the sense of responsibility is not constantly brought home. Soldiers, especially, are like so many children, requiring constant watchfulness and repression of irresponsibility.

In our country it is unfortunately a fact that a tendency exists among all classes to regard the oath of enlistment with lightness. But this exists quite as commonly among civilians as soldiers, and the fact that the State governments give so little co-operation in the apprehension of deserters, and that civilians in general assist and shield deserters, goes a long way towards creating a feeling among enlisted men, that desertion is not the heinous offense that it really is. The serious nature of the offense will never be brought home to all concerned until the Government traces and punishes deserters with the same assiduity that it manifests against counterfeitors, and other violators of the federal law.

Loose talking and intemperate criticism in any military organization—company, battalion, or regiment—is usually an index to poor discipline. Moreover, it is not confined to military organizations, but develops and thrives wherever lack of proper restraint permits its presence. The commanding officer who experiences its evils has usually either himself or his predecessors to blame for a state of affairs which made such intemperate criticism possible.

But Major Bullard goes even still further, and arraigns certain of his Philippine comrades in this remarkable statement: "It is the recent experience of many of us to have seen officers of the United States Army who have been years in the service, by opinion and conduct nullify over wide regions and render ineffective the settled and well-considered policy of their government, because they were not

in their words, 'in sympathy with the Government's policy in keeping the islands.' This was the development of the vice in their cases. Having seen this, one thinks less harshly of the character of others, who, forty years ago, with views under like conditions, were square and manly and soldierly enough not to remain within our lines, but joined the enemy in the open field."

It must be confessed that this is a pretty serious charge, but fortunately, even if true, can hardly admit of application to our army at large. In other words, Major Bullard's severe and pessimistic arraignment of officers and men, applies to but a small fraction; and the panacea for this outcropping of the Old Adam, is as in all armies from the time whereof the memory of man runneth not to the contrary, *discipline*.

The article creates the impression that the writer has had the misfortune to be thrown with an exceptionally ill-disciplined and insubordinate outfit.

CANDOR.





Reviews and Exchanges.

Lee and Longstreet at High Tide.*

MRS. LONGSTREET has written a supplement to Gen. James Longstreet's most interesting book entitled "From Manassas to Appomattox."

From its title page we are led to expect a simple discussion of the relations of General Longstreet to General Lee during, and subsequent to, the Battle of Gettysburg; but Mrs. Longstreet has deemed it wise to write of her husband's life, and she has produced a book of rare value to those interested in the United States Army since 1836.

One reads the narrative of the devoted wife with a tender sympathy, and if, as an officer of the Army of the Potomac, he has been in the field opposed to the troops commanded by Longstreet for four long years; and, if more than this, he has stood and watched Longstreet's command during the whole of the battles of July 2 and July 3, 1863, at the Battle of Gettysburg, he eagerly seeks to add, to the testimony Mrs. Longstreet cites, his own attestation to Longstreet's wonderful aggressive action in every battle, and to substantiate her claim to his never-to-be-overestimated influence and to his wisdom in counsel on every field in which his command was present, as this has been presented to us through their own testimony, as brought to us through their own histories of the great Civil War. Nothing—that Longstreet did, no move that he sought to make was under valued by Union generals. When Longstreet fought us we knew how earnest was the work before us; we felt how difficult it was to defeat or to stay the progress of a command under such a leader.

For wisdom in counsel, for impetuosity in attack, for staying qualities, for gallantry in action, Longstreet stood, with us, the ablest, the most to be feared, of all the Confederate generals.

For such a general to be attacked by those who misunderstood the man and by those who intended to render Appomattox of no real importance, who desired to foster ill will, and who hoped to revive slavery and to maintain the right of States to secede from this Union, was not unexpected. It was a dreadful blow to these men—this

*"Lee and Longstreet at High Tide: Gettysburg in the Light of the Official Records." By Helen D. Longstreet; Published by the Author. Gainesville, Ga., 1904. Electrotypes and printed by J. B. Lippincott & Company: Philadelphia.

crowning act of patriotism on the part of Longstreet—his acceptance of office under Grant. Why should he, their greatest general after Lee, lay down the sword, when they had only sheathed it?

It is to be deplored that Mrs. Longstreet considered it of any moment to refer to General Gordon's book, or to any charges against Longstreet, coming from a writer so unbalanced, so dreamy; always overestimating his own influence, and deplored the want of appreciation on the part of his superiors of the impossible tactics and incomprehensible strategy, as he says in his book, so often proposed or urged when, in his opinion, his commanding officers needed stimulation.

Pendleton's charge, made in 1873, is absolutely blotted out by Pendleton's official report of 1863. How the man could have forgotten the part he played on the field of Gettysburg and could have written such utterly impossible things is beyond our comprehension. But Pendleton, in 1873, was of the unreconstructed number, and he wrote for the mass of his confederates—Longstreet was to be destroyed—he had become a leader in reconstruction.

If the reader of those lines be of those who have been led to believe that Longstreet disobeyed General Lee at Gettysburg, let him read this work, published by Longstreet's widow. He will be undeceived; and it is by the testimony of the officers of Lee's staff that he will be made to view the conduct of Longstreet as beyond censure, his advice strategically correct, his example encouraging, his actions gallant and patriotic.

We believe the story of Longstreet. His clear, honest, truthful, statement of his battle of July 2, 1863, at Gettysburg is sufficient for the most of our writers; we have no sympathy for those who, politically opposed to Longstreet, presumed to falsify history; we do not find anyone who reads the history of the Civil War willing to acknowledge that the detractors of that great corps commander ever made out any plausible case. We do believe that they would not have dared to attack his reputation had R. E. Lee lived to tell the story of the attack.

A defense of Longstreet! Can it be that a sufficient number of people of any position in the South believe that Longstreet disobeyed Lee on July 2, 1863, at Gettysburg to render a defense of this great soldier necessary or dignified.

Who was to order an early attack on Meade's left on July 2d? General Lee himself. And Lee did not do this. His own staff officers state that General Lee did not determine to make this attack until about noon.

The Third Corps was not moved out until about 2 p. m. When it was found to be too late to restore that corps to its position, the Fifth Corps and the Second Corps were sent to sustain and support it. Meade was too good a soldier to fail any corps commander when his troops were in jeopardy, and on this occasion he was prompt to engage and to repulse the columns of Longstreet. At an earlier hour Longstreet would not have had sufficient troops in position to overwhelm the Third Corps even if it had been moved out to the position in which he finally found it.

Lee did not give to Longstreet the order to attack until the afternoon of the 2nd of July, 1863. That and other questions involving the movements on both sides on July 2d were settled long ago. Meade is dead. Lee is dead. Their testimony is final and will remain final. It is a sad thing to revive old controversies.

But if a book such as Longstreet's "From Manassas to Appomattox" needed a supplement, we have it in Mrs. Longstreet's "Lee and Longstreet at High Tide." *i. e., in the first few chapters* of the book, so titled, Chapter I to Chapter IX. No more was required to establish the fact that Lee and Longstreet were friends, devoted friends. Longstreet was Lee's right arm. There never was a difference of any moment between them. Longstreet was a soldier—a loyal soldier, a disciplined soldier.

The volume before us, from page 93 to page 346, presents Longstreet to us as "In his boyhood days," in "his life-long friendship for Grant," etc., etc., or "Longstreet the Man." Then "Longstreet on the Fields of Mexico," and "Longstreet in Great Battles before and after Gettysburg," and finally, "at Appomattox."

The appendix contains "Tributes from the Press," "Resolutions by Camps and Chapters" and letters from President Roosevelt and Bishop Ireland, Gen. Fred'k Grant and others. These show how universally admired and respected was Longstreet. His detractors must have been dumb-founded.

But, after all, the abuse of Longstreet, after Lee had passed away, was women's work, "stay at homes," angry, rebellious women, who were busy teaching their sons the principles of the "Lost Cause." Teaching them how to restore slavery, and how to uphold the right to secede, as taught even now in one of our Northern universities and in all of the Southern schools; women who later were to refuse to send a wreath of flowers to be laid on the grave of a "Longstreet." This true American, this reconstructionist, all because he was brave enough and wise enough to see the true path to reconstruction and to the rehabilitation of the South.

These women abused Longstreet and some of the women of the South made a few weak men falsify their own records to further the attack upon him. His crime was "He took office under Grant."

They did dishonor themselves, but they could not, and they did not dishonor the great, heroic soldier when they blazoned forth "we will not send flowers to the grave of Longstreet."

When you read this book from "the story of Gettysburg" to the end, you will know much about "Appomattox," "the Army of the Potomac," "the Army of North Virginia," and "the failure for a period of all efforts for reconstruction," and all of this information is there because it is history. It had to be told—this wretched showing up of bitter opposition—and it is well told—modestly told—truthfully told. Bless the woman who did it—who told the story fearlessly.

A. S. WEBB.

Indian Fights and Fighters.*

IN this volume, which is the fourth one of the series, "American Fights and Fighters," the author treats of Indian fights and fighters from the time of General Carrington's Powder River Expedition to and including the annihilation of General Custer's command on the Little Big Horn in 1876. We are glad to note that a second volume is to appear in the fall covering the other Indian fights in the Northwest, and that a third volume dealing with the

* *Indian Fights and Fighters.* By Cyrus Townsend Brady, LL.D. McClure, Phillips & Co., New York. 1904.

Apaches is to follow the second. Any officer that has original information on these subjects would do well to furnish such data to the author so as to enable him to reach a correct conclusion on the questions involved.

The American Army cannot be too grateful to Doctor Brady for putting on record in such convenient and attractive form the narratives which he has spared no pains to make historically correct. He is honest and fair in his criticisms, and, although we do not always agree with him, yet are we glad to see that on mooted questions, such as the cause of the Custer catastrophe, he gives both sides a respectful and an impartial hearing.

Every American officer should read the book. The older ones, to refresh their memories; the younger ones, to see what the soldier's lot was on the frontier before the settlement of the Indian question. And we feel sure that every subaltern, when he has perused its pages, will mentally buckle up his belt one hole tighter, ready to prove himself a worthy successor of the brave men who followed the flag when death was the least of the evils that stared them in the face.

Every American man and woman should read the book, especially those men and women who think American history records no deeds that compare with those of other lands. They will be better patriots for having been made to know about exploits as daring as any that history tells of.

We can assure the author that in thus preserving the record of those stirring times he has done posterity a service. Fortunate indeed was he and the army to have had men like General Carrington revise the chapter on the Fort Phil Kearny catastrophe; General George A. Forsyth the chapter on the Beecher Island fight; General Hughes, Colonel Godfrey, and others the chapters that deal with Custer's last campaign.

The account of the Little Big Horn fight is the most complete unbiased account that has ever been published, and it is natural and right that this should be so since the author had all the original information from both sides at his disposal. Regretfully the author arrives at the conclusion that Custer disobeyed his orders. He makes out a strong case. But it is our opinion that the now justly celebrated Terry order to Custer was badly worded by him who drew it up. The only *positive* portion of the order is at the very beginning, and reads as follows:

CAMPAT, MOUTH OF ROSEBUD RIVER, MONTANA TERRITORY.

June 22, 1876.

LIEUTENANT-COLONEL CUSTER,
7th Cavalry.

COLONEL:—The brigadier-general commanding, directs that as soon as your regiment can be made ready for the march, you will proceed up the Rosebud in pursuit of the Indians whose trail was discovered by Major Reno a few days since. * * *

If it wasn't intended that General Custer should go *in pursuit* of these Indians why was this paragraph put in and why was it worded so positively, compared with the rest of the order? Does *in pursuit* of mean to push after, or does it mean merely go in quest of? We think it means vigorous *following* of the Indians whose trail Reno had discovered on the Rosebud some days before, but which

he had not *pursued* far enough to determine in which direction it finally turned. The order continues:

It is, of course, impossible to give you any definite instructions in regard to this movement, and were it not impossible to do so, the department commander places too much confidence in your zeal, energy and ability to wish to impose upon you precise orders which might hamper your action when nearly in contact with the enemy. ***

The general *direction* in the first part of the order is till the only order that Custer has thus far received, and the department commander himself declares it is impossible to give *definite instructions* in regard to *this movement*. What movement? The movement "up the Rosebud in pursuit of the Indians whose trail was discovered by Major Reno a few days since." And even if it were possible to give *precise orders* the department commander declares he wouldn't give them to his subordinate as otherwise they might hamper the latter's action *when nearly in contact with the enemy*.

"When nearly in contact with the enemy;" here is a loose phrase. Did Terry consider his command at the mouth of the Rosebud *nearly in contact with the enemy*, or did he mean that he did not wish to give Custer *precise orders* that might hamper him when he should arrive *in his pursuit of the Indians* "nearly in contact with the enemy?" We confess we do not know exactly what was intended.

The order continues:

He will, however, indicate to you his own views of what your action should be, and he desires that you should conform to them unless you shall see sufficient reasons for departing from them.

We think that this portion, although couched in deferential terms is an order down to "unless you shall see sufficient reasons for departing therefrom." And if Custer saw or thought he saw sufficient reasons for departing therefrom *there was no violation of orders*.

Did he see or did he think he saw sufficient reasons for departing from the views of the department commander? Who can tell? *Only General Custer himself. He is the principal and the only witness in his own behalf, and he cannot defend himself.* Shall we give Custer the benefit of the doubt? He is entitled to it even though his action did cause the failure of the plan of General Terry, and even though it caused the loss of the five troops of his gallant regiment.

Discretion was given him in case he saw sufficient reasons for departing from the views of the department commander.

The order continues:

He thinks that you should proceed up the Rosebud until you ascertain definitely the direction in which the trail above spoken of leads. Should it be found (as it appears almost certain that it will be found) to turn toward the Little Horn, he thinks that you should still proceed southward, perhaps as far as the headwaters of the Tongue, and then turn toward the Little Horn, feeling constantly, however, to your left so as to preclude the possibility of the escape of the Indians to the south or southeast by passing around your left flank. The column of Colonel Gibbon is now in motion for the mouth of the Big Horn. As soon as it reaches that point it will cross the Yellowstone and move up at least as far as the forks of the Big and Little Horns. Of course its future movements must be controlled by circumstances as they arise, but it is hoped that the Indians, if upon the Little Horn, may be so nearly inclosed by the two columns that their escape will be impossible

General Terry, as future events proved, sized up things exactly—the Rosebud trail did turn toward the Little Horn, the Indians were there; and had they stayed there, and had Custer gone south in accordance with Terry's views, then crossed to the Little Big Horn, swept down that stream, and gotten to the Indian encampment about the same time that Gibbon reached the forks of the Big and Little Horns, the Indians would have been hemmed in between the two commands, and we might to-day be writing about a victory over the Indians in place of giving the dead general the benefit of the doubt.

The order continues:

The department commander desires that on your way up the Rosebud you should thoroughly examine the upper part of Fullock's Creek, and that you should endeavor to send a scout through to Colonel Gibbon's columns with information of the result of your examination.

The remainder of the order is immaterial to the issue. We judge from what Colonel Godfrey says that Custer carried out the Fullock Creek examination. We know Custer did not send a scout to tell Gibbon of the result of this examination, and from what information we have it looks as though he did not endeavor to do so.

If this celebrated order of June 22, 1876, is perfectly clear, precise and mandatory, why should there be two such strenuous sides to the controversy? There *are* two sides and they are ably conducted; the one finds good and sufficient reasons for what Custer did, the other equally good and sufficient reasons for what he failed to do; but neither side has considered that the principal and the only witness to decide the controversy is beyond recall, and hence they can only tell what others intended should be done, or what they would have done had they been in Custer's boots.

We are glad to see that the author reprints as his closing chapter the sketch entitled, "What they are there for"—the story of the life of General Guy V. Henry. No greater renown as a "fighter" can come to any man than to be considered the equal of Guy V. Henry! He had no superior in coolness, dash, bravery, and resoluteness of purpose, and he had mighty few equals. "That's what we are here for"—when the last moment of hardship, wounds, death, nay torture itself, is with us we cannot do better than repeat the words of one who was indeed the bravest of the brave.

P. E. T.

The Trail of Lewis and Clark.

THE Trail of Lewis and Clark, 1804-1904," by Olin D. Wheeler, and issued in two volumes, by G. P. Putnam's Sons, is well described by the subtitle as "a story of the great exploration across the continent in 1804-1806; with a description of the old trail, based upon actual travel over it, and of the changes found a century later." The author's plan has been to take the official journal of Lewis and Clark and their associates, and go over the trail with an endeavor to locate it on the ground and determine the particular points of importance to the explorers at the time of their visit. The object of this laborious and painstaking work is not apparent, unless it be to make corrections in the orthography of proper names or other unimportant details. It is difficult to see wherein it adds anything

to the world's knowledge, as large portions of both volumes are made up of quotations from other published works, and the observations and conclusions of the author seem quite natural to the average reader of ordinary intelligence. The work makes it quite clear that the country was pretty wild one hundred years ago, and that the Lewis and Clark Expedition met and surmounted many difficulties, and the author reaches the conclusion that the country has changed a good deal and it is easier to cross the continent now than it was a century ago. The former can be learned from any one of the many books the author so liberally quotes, and the transcontinental rail-ways would be greatly disappointed if the literature which they dis-tribute gratuitously failed to convince the reader of the latter. To the people of the great Northwest, who desire a knowledge of the country in which they live and prefer it second hand, the volumes may be interesting and valuable. The work is profusely illustrated, and the press work and material used are of the best; indeed, all of the mechanical work is encouraging evidence that if "of making many books there is no end" the quality of the workmanship is not diluted by the literary deluge.

H. O. S. H.

The Rebel Scout.*

THIS little volume is of some interest as affording insight into the means whereby the plans and movements of the Union forces were forecast and communicated to the Confederate author-ities. It is to be regretted that the recital is rather impaired as to its military value, by some inaccuracies of statement, and is further encumbered by the consideration of matters having no especial hearing upon the experiences of the author. Much of the phraseology is also more reminiscent of the language—too prevalent on either side at the period under consideration—than of the time itself, and is likely to provoke only a tolerant smile from those who were active participants in its stirring scenes. The "Chaplain-Scout" seems at times unable to dissociate the respective functions of his dual voca-tions in yielding to the temptation to indulge in flights of elegance, out of keeping with his theme.

A. C. R.

Doctor Barnardo.†

THIS descriptive title brings to the attention of the American reader a work little known on this side of the Atlantic. Most persons would be inclined to regard it as the title of some latter day novel or extravagant romance; or if it were considered more serious in its nature, to ask, "Who is Dr. Barnardo?"

Yet in England, and especially in London, his must be a house-hold name, and after one has read this simply told tale of his life work, one can well understand that it should be so.

Briefly, the book tells the story of the truly remarkable work this one man has done, and is doing, for the poor children of London.

**The Rebel Scout.*" Capt. Thomas Nelson Conrad. The National Publishing Co., Washington, 1904.

†*Dr. Barnardo, the Foster-Father of Nobody's Children.* By John H. Batt. Partridge & Co., London, 1904.

Dr. Barnardo, born of Spanish ancestry on his father's side and of English upon his mother's, was a man of natural devotion and energy in all things, and peculiarly a lover of children, for whose good he was later to give his entire life.

In 1865 he was a medical student in the London Hospital, who found pleasure in teaching during his leisure moments such ragged street lads as he could gather in the disused donkey stable which served as schoolroom.

Into this school came one day little Jim Jarvis, "as a battered little bird might enter shoeless, hatless, shirtless, and with only a few rags to cover him from the keen wind and the pitiless night."

"No father, no mother, no home, no friends, no place to go to," was the pitiful tale that enlisted the young student's sympathies. He went forth with this little guide, and found amid surroundings of indescribable squalor and wretchedness, groups and colonies of lads sleeping under rotting piers, in the iron gutters of sloping roofs, and wherever a place could be found to shelter, and often with none, under the open sky. On one occasion he found in one such nest seventy-three shivering, starving lads.

Such facts as these with their attendant miseries led to young Barnardo's determination to do something more than teach a handful. He was, though he knew it not, about to decide upon a plan of rescue that was to influence the lives of hundreds of thousands of the outcast poor of London, the "Nobody's Children," whose foster-father he was to become. From this humble beginning, stimulated by his first public contribution from a poor servant of 6d., has come the vast organization known as "Dr. Barnardo's Homes."

Since the first report in 1867 to the present date, the amount of money contributed of voluntary offerings for his work has been about \$500,000 each year—a sum, by the way, though so enormous, equal only to England's weekly liquor bill—and he has adopted and trained already over 52,000 children.

The work, for many years carried on without formal organization, has had more recently for its presidents such men as Lord Cairns, the Duke of Argyle, Lord Polwarth, and Lord Brassey. The donors and helpers at present number 100,000, and a survey of the names reveals the remarkable fact that of these 64,000 gave less than \$5, and 23,000, less than \$25 each, so widespread is the interest in this charity. To mention a few of the items found in this interesting book, in one year there were 760 infants under five years of age, of whom but one died; the average death rate for an equal number being 41.

In the year 1902 he received 1166 children, either too old or too young to receive Government aid. The "Ever Open Doors" of Bristol and other cities admitted, in 1902, 1530 children, and gave 20,000 lodgings and 60,000 free meals.

The association in addition cares for 1200 blind, deaf, crippled, and otherwise helpless little ones.

In the same year 1050 boys and girls were sent to industrial farms and homes in Canada, making over 15,000 in all who have been sent to Colonial homes. In the same year (1902) over 1400 children were sent to English situations, or to sea from the various training homes. There are always 600 under technical instruction, and 3000 are boarded out in country homes, besides thousands who received temporary shelter and assistance.

The Church of England "Waifs and Strays Society," and the

homes established by Mr. Shaw, are professedly the outcome of Dr. Barnardo's earlier work in the same field.

Then there are the Girls' Village Homes at Barkingside. This consists of a fine church which seats 1200, the day schools and Gymnasium; the schools conforming to the Government Code, as do also the cooking schools. There are also the workrooms and the Home for the Deformed Young People. At Mossford Lodge the secretaries, teachers and other workers live; in all, fifty-six separate homes to accommodate 1000 inmates. There is a School of Needlework and a laundry also in the village. The cottage home idea has proved vastly superior to the old barrack plan of binding together all sorts and conditions and ages.

The religious life is not lost sight of, and church services and instruction are carefully provided for. In view of the fact that among the thousands of contributors there will be much diversity of religious belief, the founder has adopted the rule of inquiring minutely into the parents' religion in every case. Those whose parents are Church of England people are sent to the Church of England Section of Homes—otherwise, they are sent to the Non-conformists' Section, and chaplains and instructors are provided in accordance with the varying conditions thus found.

The great central headquarters of the Dr. Barnardo Homes is in Stepney Causeway, East London, containing a vast assemblage of rooms and offices of every sort. It is the largest block of its kind in East London, and every one of the countless cases presented here is carefully investigated.

In addition to the departments already mentioned, are the Babies' Castle in Kent, Leopold House, Gorey House, Labor House, Children's Fold (for Cripples), the Beehive, the Sick Waif Hospital, the Free Day Schools, the "Edinburgh Castle" with capacity for 3000, the Watt's Naval Training School for 150 boys, and other forms of allied philanthropy that are mentioned in this wonderful story of one man's inspiring work.

The book deals simply and convincingly with its topic, and tells of the struggle in early days with lack of money, of the greater problems and perplexity to-day with an assured income of \$500,000, but with a vastly increased responsibility.

In the words of the "Appreciation" by the Duke of Argyle: "These pages tell a marvelous tale. They show how a man equipped only with a clear brain and a stout heart may do more in his own lifetime in practical benevolence than has been accomplished before in many generations. To give to Dr. Barnardo's Homes is to give where men know the interest gained means the assured success of an immense percentage of the lives of the young around us."

E. B. S.

The Book of Toasts.*

THIS collaboration will be found useful, entertaining, amusing, of assistance to the vast number of orators who are suddenly called upon "to say something apropos."

What pleasure the two must have taken in hunting up these toasts—prose and poetry and rhyme—and how bright were they

* "Waes Hael, The Book of Toasts. Editha Lee Chase and Capt. W. E. P. French, United States Army.

when, finding nothing to be gathered from others, they set to work to do the thing themselves. They were equal to it.

Waes Hael! Toasts for all you hold dear—from your country and flag to your best girl.

Captain French need not write another invocation to his critic. He will receive praise enough from his readers, let the critic strive as he will to belittle him. When he says in the *Honorarium*. "You know, we've stole; we know *you* know," "But we don't care one little cuss." We follow him and sympathize with them both.

"Keep mum, say nothin' (do it, too)," is his advice. We take it—all of us."

Their book is a book of toasts—and it is "for the most part bubbles gathered from the wine of others' wit, with here and there an occasional humbler globule believed to be more or less original."

Ah! The humble globules are sparkling and bright in liquid light and we enjoy them.

Although Captain French says that the prelude, the exordium, is the thing from which all men run but none read; read his prelude and enjoy his "Broaching the Cask."

He gives these toasts "In Bumpers," "In Red Wine" (these are to "The Army," "The Navy" and "War.") "In the Loving-Cup" these include "Friends, woman and man," "From the Flowing Bowl." Well, read *that* and the remainder of the book. Then buy it, and hold it at hand. You may require its assistance. Dinners will be brighter in the near future.

A. S. W.

Scientific American Reference Book.*

THIS is an interesting book of about 500 pages, bound in cloth, profusely illustrated, and conveniently arranged in parts and chapters giving much valuable information. Part I treats of Progress of Discovery, Shipping and Yachts, The Navies of the World, Armies of the World, Railroads, Population, Education, Telegraphs, Patents, Manufactures, Federal Government, Post-Office, International Institutions, Mines and Mining. Part II deals with information such as Geometrical Constructions, Machine Elements, Electrical Measurements, etc. Part III, Chemistry and Astronomy. Part IV, Weights and Measures. The chapters on the Navy and Army, and all of Parts II, III and IV are of great value to military men, and especially to the technical troops. Colored illustrations are given of the Steamship, National, and code flags. Under the chapters Army and Navy the following subdivisions may be noted: Construction and Classification of Warships, Navies of the World, Order of Warship Strength, Torpedo Vessels and Submarines, Navies of the World in Detail, List of Ships of the Navy, Torpedo Boats, Submarine Boats, The Interior of a Warship, Submarine Mines, Naval Guns in the Civil War and To-day, Army of the United States, Foreign Armies, Springfield Rifle, and 16-inch Gun.

Under Mechanics very valuable information accompanied by diagrams is given showing the various machines, gears, clutches, engines, etc. Under Part IV is given precise information regarding Weights and Measures, Specific Gravity, Steam Heat, Expansion and Electricity. The book is clear in print, and has fine illustrations.

E. H. SCHULZ,
Capt. of Engineers.

* *The Scientific American Reference Book*.—N. Y., Munn & Co., 1904.

Our Exchanges.

Military.

Journal United States Artillery.—(Sept.-Oct.) Evolution of the Submarine and How Far the Lake Type Solves the Problem. Submarines. Use of Field-Artillery and Need of Reorganization of Our Field-Artillery. Employment of Artillery Fire. Minimum Distance Between a Battery and Its Mask. Proposed Method of Computing the Danger Space. (Nov.-Dec.)—Seacoast Defense. War Lessons for the Coast Artillery. Japanese Instructions Upon the Employment of Artillery in Battle. The Field-Gun Question in Foreign Armies.

Journal United States Cavalry Association.—(Jan.)—Peace Training of Officers. Shall Subordinate Officers Learn Business of Generals? Five Years a Dragoon. The Organization of a Scout and Sharpshooter Corps. An Umpire at the Army Maneuvers. A Reserve Force. Remounts. A Modification of the Detail System. The Use of the Bicycle in the Army. Suggestion to Young Officers. The Fourth Cavalry with General Lawton in Luzon. Filipino Labor. Surra. Tactical Problems and their Solution.

Journal Association Military Surgeons.—(Nov.)—Outline Organization of Dept. Health Isthmian Canal Commission. (Dec.)—On Improved Method of Standardizing the Recruit. U. S. Gen. Hospital, Presidio of San Francisco. 1901-1902. Gunshot Wounds of the Ureter. Some Features of Immediate Treatment and Transport of Wounded in Naval Warfare. (Jan., 1905.)—Observations in the Russo-Japanese War. The Apron Stretcher. Operation for Radical Cure of Varicocele. Organization and Work of Maritime Quarantine Service of Isthmian Canal Commission. (Feb.)—A Medical Reserve Corps for the Army. Roll of Honor 1903-1904. Altitude and Expansion.

Journal Royal United Serv. Inst.—(Oct.)—Education of Imperial Japanese Naval Officers of the Executive Branch. The British Cavalry. The Desirability of the Acquisition of Infantry Officers, Especially of the Higher Ranks, of a More Intelligent Knowledge of the Use of Field-Artillery than they Generally Possess. Speed and Consumption of Steamships. (Nov.)—Types of Traction Engines for Military Purposes. Mechanically Propelled Vehicles for Military Purposes. The South of England as a Theater of War. Future of the Submarine Boat. (Dec.)—Secretary's Notes. Strategic Features of the Operations in Manchuria, as Illustrated by European and American Campaigns. Short Service and the Naval Reserve. Some Notes on the Active Service Kit and Equipment. (Jan., 1905.) Protection of Commerce in War, with Special Reference to the Cape Route. The Sick Horse in Peace and War. The Proposed Reorganization of the Infantry, Militia and Volunteers. Historical Sketch of the Irish Infantry Regiment of Dillon and the Irish Stuart Regiment in the Service of France 1690-1791.

Journal United States Infantry Association.—(Oct.)—A Second West Point. The American Lake Maneuvers of 1904. The Ohio State Maneuvers. The California Maneuvers. The Manassas Maneuvers. The Foundation of an Army. Rifle Firing and the National Rifle Competition.

Journal United Service Institution of India.—(July).—Influence and Application of Sea Power on Expeditions Based on India. (Gold Medal Essay.) The Auxiliary Weapons of Cavalry. The Battle of Kingchau. Mule and Pony Transport in India and its Efficiency. The Employment of Infantry in Defense of Coaling Stations. A Reserve for Indian Cavalry. Cover. Training and Organization of Infantry Scouts. Skirmishing. A National Chinese Renaissance. The Instruction in, and Importance of, Rapid Preliminary Formations in the Training of Infantry. Rapid Photography in War. Infantry and Field-Artillery. (Oct.) The Influence and Application of Sea Power on Expeditions Based on India. Weather and Warfare. Can Cavalry Charge Unbroken Infantry? Amelioration of the Conditions Applying to Native Soldiers Discharged on Account of Medical Unfitness. A System for the Training of Scouts for Hill Warfare. The Value in the Field of a Highly Mobile Force, Specially Organized with a View to Distant Raids, its Training, etc. Communications in the Field.

Proceedings Royal Artillery Institution.—(Oct.)—Future Training, Organization and Tactical Employment of Q. F. Field-Artillery. The Question of Competitive Practice in Horse and Field-Artillery. Battle Tactics of a Q. F. Artillery Brigade and the Brigade Staff. Proposed Reorganization of the R. H. A. by Brigades. Plea for the Disappearing Gun. Proposed System of Fighting Charts in Lieu of "Square" System. (Nov.)—The Evolution of a Field-Gun. The Organization for Quick Firing Artillery. The Evolution of Artillery. Signally for Horse and Field-Artillery. Signalling as Applied to Field-Artillery. (Dec.)—Field Astronomy. Organization of Field-Artillery. Plea for a Field-Artillery Training School. The Pattern Telegraph. Artillery Practice Camps. (Jan.)—The Evolution of Artillery. The R. G. A. Chain of Command. The Campaign of Corunna. Communication Between Infantry and Artillery in Attack. Tactical Rôle of the Field Howitzer.

Revue de l' Armée Belge.—(July).—Some Consideration on the Rôle of Bicycle Companies. The Field-Artillery Question in Austria. The War in the Far East. (Sept.)—The New Repeating Rifle Mauser M. 1904. Some Studies Relating to Infantry. Notes Concerning the Russo-Japanese War.

Revue Militaire des Armées Etrangères.—(Sept.)—Question of Field-Guns in Foreign Countries. Organization of the Bulgarian Army. War Budget of the German Empire for 1904. (Oct.)—Military Academy of Berlin. War Budget of the German Empire. Remount System in Switzerland. (Nov.)—The Imperial German Maneuvers of 1904. New Maneuvering Regulations of the English Cavalry. Remount System in Switzerland. (Dec.)—Annual German Maneuvers of 1904. New Regulations for Maneuvers of the English Cavalry. (Jan.)—The Question of Field Howitzers in Foreign Armies. Imperial German Maneuvers in 1904.

United Service, New York.—(Oct.)—West Point.—Her Sons. A Tour in Southern Manchuria in Sept., 1901. Campaign and Battle of Shiloh. Strategy and Tactics of the Russo-Japanese War. (Dec.)—Administration of Justice in the Navy. The Mother of Navies. The Star Spangled Banner. The Battle of Sedan, Beyond and Back Again.

United Service Magazine, London.—(Oct.)—Russia and Japan in the Far East. Lhassa and its Armed Rabble. The Proposed Abolition of the Militia. Some Remarks on Recent Changes. Indian Volunteer. Military Training. The Squadron System: Specialism in the Royal Artillery. (Nov.)—Thirty Years of Naval Progress. Some Lessons from the Russo-Japanese War. A National Ambulance Service. Voluntary Enlistment and an Effective Militia. Evolution of the Short Service System. Metaphysical Maneuvers of a Phantom Army. Evolution of Modern Strategy (see also Dec., 1904). The Heavy Artillery of a Field Army at River Crossings. Squadron System Artillery in the Far East. (Dec.)—Of the War in the East. Great Britain's Serious Position. The Genesis of the Japanese Fleet. Our Naval Expenditure. How to Reduce It. Armored Field-Artillery. The Education of the Cavalry Officer. Military Training. Peace Maneuvers. A Retrospect and Prospect of War. (Jan., 1905). The Past Naval Year. A General Staff for the Navy. Our Coast Defences; by Whom Should They be Manned. The Military Situation. The Reorganization of the Indian Army. An Asiatic Conqueror. Minor Expeditions of the British Army from 1803 to 1815. Declarations of War. Military Education.

Naval.

Proceedings of the U. S. Naval Institute.—(Sept.)—A Handicap on United States Battleships. Training Ranges and Long Range Firing. A Study of Attacks upon Fortified Harbors. Colliers and Coaling Stations. Fire Control. War and its Prevention. (Dec., 1904). The Korea's Ward-room Mess. A Study of Attacks upon Fortified Harbors. Operations of the Navy and Marine Corps in the Philippine Archipelago. The Significance of Overcrowding. Desertion and its Prevention. The Battle of Ciudad Bolivar and the End of the Revolution in Venezuela. Rifling. Methods of Estimating the Coal Endurance of a Naval Vessel.

Miscellaneous.

- Annales de la Sociedad Cientifica Argentina*: regular issues, to date.
- Armee et Marine*: regular issues, to date.
- Boletin del Centro Naval*: regular issues, to date.
- Bulletin American Geographical Society*: regular issues, to date.
- Current Literature*: regular issues, to date.
- Journal of the Western Society of Engineers*: regular issues, to date.
- La Belgique Militaire*: regular issues, to date.
- La Engeneira*: regular issues, to date.
- La Revue Technique*: regular issues, to date.
- Political Science Quarterly*: regular issues, to date.
- Proceedings of the American Society of Civil Engineers*: to date.
- Review of Reviews*: regular issues, to date.
- Revue du Cercle Militaire*: regular issues, to date.
- Revista di Artiglieria e Genio*: regular issues, to date.
- Revista Maritima*: regular issues, to date.
- The Scientific American*: regular issues, to date.
- The Popular Science Monthly*: regular issues, to date.
- The Seventh Regiment Gazette*: regular issues, to date.
- The Medical Record*: regular issues, to date.
- The Century Magazine*: regular issues, to date.
- The Army and Navy Journal*: regular issues, to date.
- United Service Gazette*: regular issues, to date.

For Library and Review.

Report of Maj. R. K. Evans, Asst. Adjt.-Gen., U. S. A. Chief Umpire, Maneuver Division, American Lake, Washington, 1904. Mann & Beach, Portland, Ore., 1904.

Historical Sketch of the Corps of Engineers. By Brig.-Gen. A. A. Humphreys, Chief of Engineers (1876). History of the Engineer Battalion. By First Lieut. Thomas Turtle, Corps of Engs.

Company "A" Corps of Engineers in the Mexican War. By Capt. G. W. Smith, Corps of Engineers (1896).

Biography of the late Bat. Maj.-Gen. Joseph G. Totten, Chief Engineer, U. S. Army. By Bat. Maj.-Gen. J. G. Barnard, Col. of Engs., 1866. Washington Barracks, D. C., 1904.

Water Supply of Washington, D. C. By Col. Alexander M. Miller, Corps of Engineers. Washington Barracks, D. C., 1904.

Report of the Joint Encampment for Field Instructions of United States Troops and the Organized Militia of California. August 13 to 27, 1904. Maj.-Gen. Arthur MacArthur, Commanding.

Report of Maj.-Gen. Arthur MacArthur on the Encampment for Field Instruction and Maneuvers in the Pacific Division, 1904.

Report of the Librarian of Congress for the year ending June 30, 1904. (Washington) Government Printing Office, 1904.

Report of the Superintendent U. S. Naval Observatory, for the year ending June 30, 1904. (Washington) Government Printing Office.

Arbitration and The Hague Court. By John W. Foster, Pres. National Arbitration Conference. (Boston and New York) Houghton, Mifflin & Co., 1904.

Heath's Memoirs of the American War. Reprinted from the original edition of 1798. (New York) A. Wessels Company, 1904.

The Napoleon Myth. By Henry Ridgely Evans. (Chicago) The Open Court Pub. Company, 1905.

Indian Fights and Fighters. By Cyrus Townsend Brady, LL.D. (New York) McClure, Phillips & Co., 1904.

Military Government and Martial Law. By William E. Birkhimer, LL.B., Maj. Gen. Staff, U. S. A. Second Edition revised. (Kansas City) Franklin-Hudson-Kimberly Pub. Co., 1904.

Syllabus of Davis's International Law. By C. A. Soane, Third U. S. Cavalry. (Kansas City, Mo.) Franklin-Hudson-Kimberly Pub. Company, 1904.

Estimating Distance Tables. By Capt. Edwin Bell, Eighth U. S. Infantry. (Kansas City, Mo.) Franklin-Hudson-Kimberly Pub. Co., 1904.

The Rebel Scout. By Capt. Thomas Nelson Conrad, of the Army of Northern Virginia C. S. O. (Washington City) The National Pub. Co., 1904.

Military Studies. The International Military Series, No. 8. By Frederic Louis Hinderkoper. (Kansas City) Franklin-Hudson-Kimberly Pub. Co., 1904.

The Campaign with Kuropatkin. By Douglas Story. (Philadelphia) J. B. Lippincott Co., 1905.

Adjutants' Manual. By Courtland Nixon, Captain Second Infantry, U. S. A. (New York) John Wiley & Sons, 1905.

New Forces in Old China. By Arthur Judson Brown. (New York) Fleming H. Revell Co., 1905.

The Russo-Japanese War. By Thomas Cowan. (New York) Longmans, Green & Co., 1904.

With Kuroki in Manchuria. By Frederick Palmer. (New York) C. Scribner's Sons, 1904.

The Illini; A Story of the Prairies. By Clark E. Carr. Third Edition. (Chicago) A. C. McClurg & Co., 1904.

Trials and Triumphs. The Record of the Fifty-fifth Ohio Volunteer Infantry. By Captain Hartwell Osborn and others. (Chicago) A. C. McClurg & Co., 1904.



ANNUAL REPORT, 1904.

GENTLEMEN: The Executive Council has the honor to present its report for the past year as follows:

No event affecting the Institution of sufficient importance to call for extended remark has occurred during the year. A general meeting for which invitations were extended to a considerable number of persons not members of the Institution, was held on the 19th day of November, 1904, at the armory of the Seventh Regiment of New York, the use of which was given for the occasion by that regiment, at which meeting an able and interesting essay was read by Col. Arthur L. Wagner, of the General Staff of the Army, upon the subject of the recent "Combined Maneuvers of the Regular Army and the Organized Militia." Much interest was excited by the announcement of the meeting and of the subject for discussion. The attendance was good, somewhat over a thousand persons, in quite large part members of the National Guard.

There has been an addition to membership during the year, and the finances are in a satisfactory state.

The good relation of the Institution to the services is well evidenced by editorial remarks in the issue of *The Cavalry Journal* for this month, quoted in part as follows:

"In glancing through this index (referring to the index recently issued by the Institution), one who has not kept pace with the progress of the Military Service Institution is struck with the array of professional subjects that have been discussed in the pages of its journal, and one has but to look over the index of authors to be convinced that most of the subjects have been ably treated, for in that list we find the names of most of the officers of our service—not all of them by any means—that have distinguished themselves as writers, or otherwise, since the Civil War.

"And in looking over this index one cannot but be reminded—if one needs to be reminded—of the vast good the Military Service Institution has done for our service."

The Institution is so firmly established and its methods of work are so well adapted to its purposes that a useful and prosperous future seems assured.

T. H. RUGER,
Major-General, U. S. A., President.

TO THE MEMBERS AND ASSOCIATE MEMBERS
MILITARY SERVICE INSTITUTION.



Journal
of the
Military
Service
Institution
1878
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1905

Governor's
Island
N. Y. H.

THE JOURNAL

MAY-JUNE, 1905



OME of the papers approved for early publication in JOURNAL for the year 1905.

- I. "EXPERIENCES OF OUR ARMY SINCE THE OUTBREAK OF THE WAR WITH SPAIN; WHAT PRACTICAL USE HAS BEEN MADE OF THEM AND HOW MAY THEY BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING EFFICIENCY."—(Silver Medal). By Captain Celwyn E. Hampton, 21st Infantry.
- II. "MILITARY HYGIENE: HOW BEST TO ENFORCE ITS STUDY IN OUR MILITARY AND NAVAL SCHOOLS AND PROMOTE ITS INTELLIGENT PRACTICE IN OUR ARMY."—(Hon. Mention, Seaman Prize). By Major F. A. Winter, M.D., U. S. A.
- III. "THE SURPRISE OF THE TABOR BRIDGE AT VIENNA. BY PRINCE MURAT AND MARSHAL LANNE, NOV. 13, 1805." II.—From the Original Documents in the Ministere de la Guerre in Paris and the Kriegs-Archivs in Vienna, by Frederic Louis Huidekoper.
- IV. "SIEGE AND FIELD OPERATIONS IN THE FAR EAST."—By Colonel William R. Livermore, Corps of Engineers.
- V. "ACCOUNTABILITY FOR PUBLIC FUNDS AND PROPERTY."—By Colonel H. O. S. Heistand, Asst. Adjt.-Gen., U. S. A.
- VI. "MILITARY METHODS AT TELLURIDE."—By Lieut. Geo. de G. Catlin, 2d Infantry.
- VII. "THE HALLECK MEMOIRS: SOME UNWRITTEN HISTORY."—Selected and edited by Gen. James Grant Wilson
- VIII. "A MEET IN THE PHILIPPINES: RATIONAL PLAN OF ATHLETIC TRAINING."—By Brig. Gen. W. H. Carter, U. S. A.
- IX. "HOW MANY MEN ARE NEEDED IN A COAST ARTILLERY ORGANIZATION IN PEACE TO INSURE A HIGH DEGREE OF EFFICIENCY IN WAR."—By "Defense."

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

The Military Service Institution.

HONORARY MEMBERS.

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Ex-President GROVER CLEVELAND, LL.D.

The SECRETARY OF WAR. The LIBUTENANT-GENERAL.

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Major-General THOMAS H. RUGER, U. S. Army.

Resident Vice-Presidents.

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Asst. Secretary.

Capt. W. J. GLASGOW, 13th Cav. A. D. C. Lieut. W. H. JOHNSON, 8th Infantry.

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Vice-Treasurer.

Executive Council.

Term ending 1909.

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Colonel J. E. GREER, Ordnance Dept. Colonel E. E. BRITTON, N. G. N. Y.
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Major A. MURRAY, Artillery Corps. Lieut. Colonel H. S. TURRILL, Medical Dept.
Col. C. C. SNIFFIN, Pay Dept. Major E. M. WEAVER, Artillery Corps.

Term ending 1907.

Bvt. Brig.-Gen. D. APPLETON, N. G. N. Y.
Colonel E. E. BRITTON, N. G. N. Y.
Colonel H. O. S. HEISTAND, Asst. Adj't. Gen.
Major A. S. CUMMINS, Artillery Corps.
Lieut. Colonel H. S. TURRILL, Medical Dept.
Major E. M. WEAVER, Artillery Corps.

Term ending 1905.

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Major D. L. BRAINARD, Subsistence Dept.

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Captain F. W. COE, Artillery Corps.

(Vacancy.)

Gen. BARRIGER.

Lieut. Colonel E. E. DRAVO, Subsistence Dept.

Lieut. Col. DRAVO.

Brig. Gen. A. L. MILLS, United States Army.

Colonel F. A. SMITH, Eighth Infantry.

Bvt. Major-Gen. A. S. WEBB, (late) U. S. A.

Publication Committee.

Gen. BARRIGER, Gen. RODENBOUGH, Col. GREER and Col. SMITH.

MEMBERSHIP AND DUES.

Membership dates from the first day of the calendar year in which the "application" is made, unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year \$2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership \$50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

Please advise promptly of changes of address.



Gold Medal—1905.

First Prize—Gold Medal, \$100 and Life Membership.

Second Prize—Silver Medal, Honorable Mention and \$50.

I.—The following Resolution of Council is published for the information of all concerned:

Resolved, That a Prize of a Gold Medal, together with \$100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and a Silver Medal and \$50 to the first honorably mentioned essay. Should either prize be awarded more than once to the same person, then for each award after the first, a *Clasp* shall be awarded in place of the medal.

1. Competition to be open to all persons eligible to membership.
2. Each competitor shall send three copies of his essay in a sealed envelope to reach the Secretary *on or before January 1, 1906*. The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside and enclosing full name and address, should accompany the essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.

3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the essay deemed worthy of the prize*; and also in their order of merit those deserving of honorable mention.

In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.

4. The successful essay shall be published in the Journal of the Institution, and the essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council, which reserves the right to publish any other essay submitted for a prize, omitting marks of competition.

5. Essays must not exceed ten thousand words, or twenty-five pages of the size and style of the JOURNAL (exclusive of tables), nor contain less than five thousand words.

II.—The Subject selected for the Prize Essay of 1905, is

THE ENLISTED MAN'S CONTRACT WITH THE GOVERNMENT: THE MUTUAL OBLIGATION IT IMPOSES AND HOW ITS VIOLATION MAY BEST BE AVOIDED.

III.—The names of the gentlemen selected for the Board of 1905 are:

General ROBERT S. OLIVER, Ass't Secretary of War.

Brigadier General JOHN W. CLOUS, U. S. Army.

Colonel JAMES REGAN, 9th U. S. Infantry.

GOVERNOR'S ISLAND, N. Y.
Jan. 1, 1905.

T. F. RODENBOUGH,
Secretary.



The Seaman Prize.

MAJOR LOUIS L. SEAMAN, M.D., LL.B. (late Surgeon, 1st U. S. Volunteer Engineers), has founded a prize in the **MILITARY SERVICE INSTITUTION OF THE UNITED STATES** by contributing annually

One hundred dollars in Gold

for the best Essay, the subject to be named by himself, and to be approved by the Executive Council.

The subject proposed and adopted for the year 1905 is:

HOW FAR DOES DEMOCRACY AFFECT THE ORGANIZATION AND DISCIPLINE OF OUR ARMIES, AND HOW CAN ITS INFLUENCE BE MOST EFFECTUALLY UTILIZED?

Competition is open to all Officers or ex-Officers of the Army, Navy, Marine Corps, Marine Hospital Service, Volunteers or National Guard.

Three copies of the Papers on the subject must be transmitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1905. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as provided for the Annual (Military Service Institution) Gold Medal Prize.

The names of the gentlemen selected for the Board of 1905 are:

Major General JOHN C. BATES, U. S. Army.

Brigadier General CAMILLO C. C. CARR, U. S. Army.

Brigadier General FREDERICK D. GRANT, U. S. Army.

T. F. RODENBOUGH,

Secretary.

GOVERNOR'S ISLAND, N. Y.,

Jan. 1, 1905.

Prizes for Short Papers.

Extract from the Minutes of a Stated Meeting of the Executive Council of the Military Service Institution of the United States, Major General Brooke, V. P., in the Chair, held at Governor's Island, N. Y. H., March 14, 1902.

* * *

Resolved: That the regulations governing the award of Annual Prizes be and they are amended as follows:

Hancock (Infantry) Prize.

The Hancock Prize: \$50, and Certificate of Award; and \$25, and Certificate of Award: to be given for the best and second best original essays or papers, the awards to be made under existing regulations for the Gold Medal, excepting that the papers shall contain not less than 2,500 words nor more than 12,000 words, and that but one copy of each paper shall be required from the author; said essays to be critical, descriptive, or suggestive, on subjects directly affecting the Infantry or Foot Service, which have been published in the JOURNAL of the Institution during the twelve months ending March of each year and which have not been contributed in whole or in part to any other association, nor have appeared in print prior to their publication by the Institution, nor have been published in the JOURNAL in any previous year, and excluding essays for which another prize has been awarded. The certificate of award to be signed by the President and Secretary of the Institution and the award to be made upon the recommendation of a committee of three members of the Institution, not members of the Executive Council, two of whom shall be Infantry officers to be appointed, annually, by the President; the award to be made and announced not later than May 1 of each year.



Fry (General) Prize.

The Fry Prize: to be the same as the Hancock Prize and awarded upon the recommendation of a board of three members, not members of the Executive Council, under the same regulations for papers or essays appearing in the JOURNAL during the twelve months ending Sept. 1 of each year, on subjects directly affecting the military service and not otherwise provided for; with the announcement not later than November 1.



Buford (Cavalry) Prize.

The Buford Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Cavalry officers, for papers published in the JOURNAL during the twelve months ending May 1 of each year, on subjects directly affecting the Cavalry or Mounted Service; with announcement not later than July 1.



Hunt (Artillery) Prize.

The Hunt Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Artillery officers, for papers published in the JOURNAL during the twelve months ending July 1 of each year, on subjects directly affecting the Artillery Service; with announcement not later than September 1.





The Santiago Prize.

THE NATIONAL SOCIETY OF THE ARMY OF SANTIAGO DE CUBA has founded a prize to be known as the "Santiago Prize," by contributing, annually, the sum of

Fifty Dollars

"for the best original article upon matters tending to increase the efficiency of the individual soldier, the squad, company, troop, or battery, published in the Journal of The Military Service Institution of the United States, during the twelve months ending December 1st in each year.

"The award to be made by the Council of the Military Service Institution upon the recommendation of a board of three suitable persons, selected by the President of the National Society of the Army of Santiago de Cuba, who shall report their recommendations on or before January 1st of the following year.

"Conditions to be the same as those prescribed for the Hancock Prize (see notice 'Short Paper Prizes'), Military Service Institution, excepting that the competition shall be limited to officers of the Regular Army or of the National Guard below the grade of major, and that papers shall not be less than 2500, nor more than 5000 words in length."

The names of the gentlemen selected for the Board of 1905 are:

Major General J. FORD KENT, U. S. Army.

Brigadier General JOHN F. WESTON, U. S. Army.

Brigadier General GEORGE H. HARRIES, D. C. Militia.

T. F. RODENBOUGH,

GOVERNOR'S ISLAND, N. Y.,

January 1, 1905.

Secretary M. S. I.

Publisher's Department.

MEDIUM SIZE FAST PASSENGER STEAMERS.

Generally Good Dividend Payers.

The new steamer now being built for quick passenger service on northern Lake Michigan represents a type of boat well worth the careful consideration by any who expect to invest in a business of that character, and we refer in particular to the *best* of modern steam vessels ranging from about 75 to 160 feet in length. The one referred to has a finely modeled steel hull, 142 feet long by 28 feet beam, and will draw with ordinary load 11 feet. Her triple expansion machinery embodies all the good, practical features that long experience demonstrates is the best, when *actual worth* rather than "first-cost" is the prime consideration, it being designed and built by Marine Iron Works, Station A, Chicago. The engine cylinder diameters will be 14 and 22 and 36 inches by 24-inch stroke, fitted with steam reverse.

These modern, quick-moving, medium-size, dependable vessels on eight to twelve-hour daily runs are far better "producers" than generally understood, and are gradually supplanting the old and slower moving combination freight, tug and passenger boats. Their first cost is necessarily greater, but generally the net results are in their favor before the close of even one season's business, as is usually the case with all first-class work, and more especially so when marine machinery enters into the calculation.

The same company (Marine Iron Works) have also been awarded the contract for building the fore and aft compound condensing machinery for new Government Survey boat for use on Gulf of Mexico coast.

* * *

HONORED BY MILLIONS.

The total admissions to the World's Fair were 19,000,000; of this number approximately 3,000,000 were officers, exhibitors, concessionaires, and employees; 6,000,000 were residents of St. Louis and 10,000,000 non-residents. Estimating that each non-resident visited the Fair at least four times, it would appear that 2,500,000 people came to St. Louis in the seven months and during this same period more than 1,250,000 people passed through the Anheuser-Busch plant. Never before has an establishment been honored by so many visitors, and it is safe to say that at least one-half of the people who came to St. Louis availed themselves of the opportunity to inspect the greatest plant of its kind in the world.

1904 was the banner year in the history of the Anheuser-Busch Brewing Ass'n, its sales being 1,365,711 barrels of beer, showing an increase of 163,949 barrels. The latter as an annual output would exceed that of the majority of the larger breweries of this country. This phenomenal increase is the more remarkable, because the past year, owing to the long winter and

PUBLISHER'S DEPARTMENT.

abnormally cool summer, was a decidedly off year for the beer business. The total gain of the beer output for the United States for 1904 was about 900,000 barrels, thus proving Anheuser-Busch's increase of 163,949 barrels to be about 20 per cent. of that of all breweries combined. Such an exceptionally good showing can only be attributed to the excellence of their products and the courteous treatment of their patrons.

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INTERESTING STATISTICS.

The following table of importations of the principal brands of champagne that arrived at the port of New York during the year 1904, should be of considerable interest to lovers of the sparkling wine:

MOET & CHANDON.....	116,549	cases
G. H. Mumm & Co.	85,228	"
Pommery & Greno.....	24,143	"
Ruinart, pere & fils.....	15,822	"
Vve. Clicquot.....	13,076	"
Piper-Heidsieck.....	9,136	"
Louis Roederer.....	6,990	"
Pol Roger.....	6,603	"
Dry Monopole.....	2,932	"

Tabulated according to Custom House Statistics by Bonfort's Wine and Spirit Circular, January 10, 1905.—Adv.